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EXPRESSO FRAMEWORK 3.0 CLEANS UP JAVA PACKAGES

BY DOUGLAS FINLAY

Jcorporate Ltd.'s Expresso Framework version 3.0 open-source framework for building Java-based Web applications integrates popular external programs while it reorganizes the methods by which Java packages are organized, to enable better access to the code.

Repackaging enables better access to code, according to Jcorporate's Nash.

"We began to understand through earlier versions what a good structural framework should look like, especially when bundling Java code," said Michael Nash, Jcorporate's lead developer. He said that because of the way Java bundles its code, developers were unable to optimize it for more efficient use. He said version 3.0 would enable Java developers to more efficiently utilize Java code because it would be packaged differently to ensure better accessibility by separating core classes from services and extensions.

In addition to reorganizing Java packages, version 3.0 integrates a number of external programs "to take advantage of those open-source projects that would help build the framework," Nash continued. Among the new additions are the Apa-

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Store It On The Web, Says I-Drive

New APIs let Internet devices access remote storage services

BY EDWARD J. CORREIA

Storing data without a local hard drive can now be done with ESP. That's the claim of I-Drive.com Inc., which has released its Enhanced Storage Platform, a set of APIs for the company's proprietary middleware that gives applications running on Internet appliances, WAP phones and other resource-constrained devices the ability to store data on Web-connected storage media and exchange files peer-to-peer.

The API builds on I-Drive's Enhanced Storage Solution

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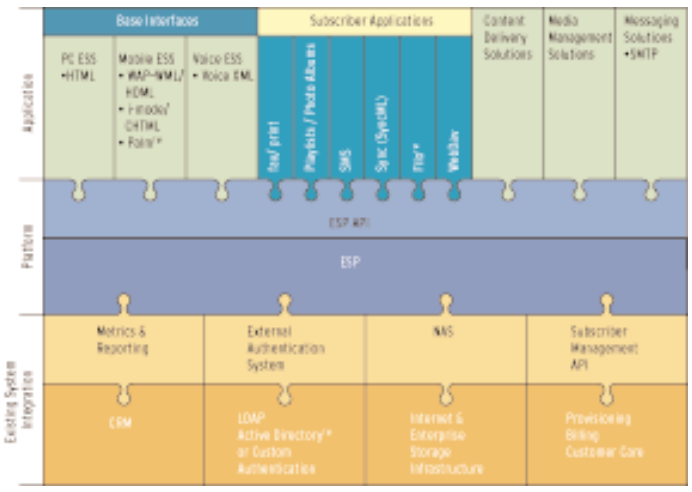

By releasing its APIs, I-Drive hopes to shift hosting to vertical developers.

Embedded Devices Join the Neighborhood

Visuality NQ brings CIFS to Linux, VxWorks, Windows CE

BY EDWARD J. CORREIA

It's a beautiful day in the neighborhood. At least, that's a sentiment embedded developers might share when they start using Network Quick (NQ), a new file-sharing system from Visuality Systems Ltd. that lets devices running Linux, VxWorks or Windows CE be seen and configured from the Network Neighborhood or Network Places browsers on Windows computers.

Sam Widerman, Visuality's CEO, described one obvious application involving an NQ-enabled printer residing on a small office network. Users could click on the printer in their Network Neighborhood window, run a setup utility stored in the printer and install the necessary drivers onto their own local machine, gaining immediate access to the printer with virtually no involvement from IT staff.

Drivers could be stored in and shared by a network device, says Visuality's Widerman.

According to Igor Lerner, Visuality's research and development manager, NQ gives embedded devices the ability to communicate using Microsoft's Common Internet File System protocol, or CIFS, which is in use on every Windows machine and on Linux/Unix machines running Samba, an open-source CIFS stack.

Lerner suggested remote-device monitoring as another possible application. "We offer the platform for doing that. You will implement your own management software, but it will utilize the abilities of our product for the transport purposes without introducing any management protocols like SNMP, which is not easy to implement." Security is maintained through user-level permissions, VPNs and other means, he added.

After some preconfiguration, NQ installs on the client device as a CIFS server capable of sharing local files or directories specified prior to build. Depending on the processor and operating system, it occupies between 150KB and 250KB on the target device. However, an NQ device cannot read remote files, and can there-

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MICROSOFT BREWIN' UP A (HAIL)STORM

Web services strategy based on standards

BY ALAN ZEICHICK

The hints have been available for months, leaked in speeches, white papers and press releases. But in late March, Microsoft Corp. finally unveiled key portions of its Web services strategy, based on the SOAP and XML standards, Microsoft's .NET Framework, Microsoft's Passport online user-authentication service, and .NET-enabled client devices whose browsers can send and receive SOAP messages.

Now marketed under the name HailStorm, the new strategy is designed to provide developers with a common set of tools, deployment servers and Internet-based authentica-

▸ continued on page 33

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Portals Leave the Gate

Companies roll out business integration platforms

BY DAVID RUBINSTEIN

Someone's going to have to widen the entryway into the business integration portal market, as several companies in the past few weeks announced strategies targeting that space.

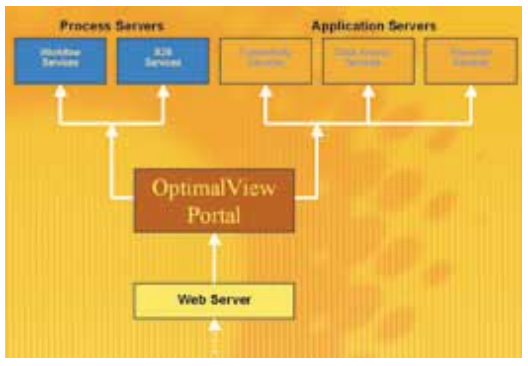
Citrix Systems Inc., Compuware Corp. and IBM Corp. each revealed plans and products to leverage portal technology. Citrix hopes to achieve that goal through the acquisition of Sequoia Software Corp., while the others are extending their product families.

"Portals have become a critical component of the software ecosystem and will have a role in the emerging category of Web services," Gartner Group vice president and research director Gene Phifer said in a statement. "Two extremely important portal functions are content aggregation and data/application integration."

Compuware (www.compuware.com) last week announced an out-of-the-box offering designed to make it easy for developers to provide Internet-based access to business information, applications and processes.

Called OptimalView, the portal package includes the Web-based interface, application server and embedded database in one install, according to Dirk Gorter, Compuware's director of product marketing. "It can be used out of the box without any additional programming," Gorter said, for companies merely looking to provide employees or customers a single point of entry into the enterprise, or it can be extended with standards-based components.

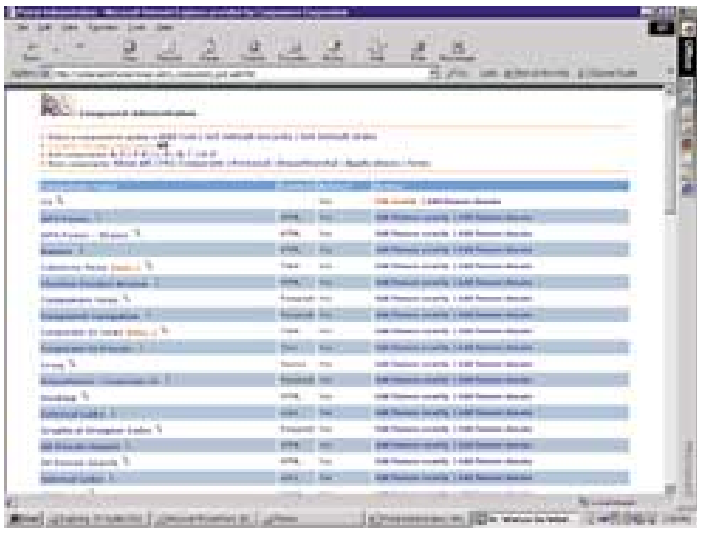
"The way we position the portal," Gorter added, "is that it becomes the primary starting point of daily work; it becomes a mission-critical application." Where some of the early portals were simply information channels, Gorter described Compuware's solution as an application and business portal. Computer Associates, Hummingbird, IBM and Iona are among the companies jockeying for position in the business integration portal space.



OptimalView gives access to processes and applications.

OptimalView uses IBM's MQSeries for its message queuing and supports databases from such companies as Informix, Microsoft, Oracle and Sybase. According to Gorter, the portal can support CORBA and COM objects and Enterprise JavaBeans for component-based development and application integration, and uses HTML, JavaScript, ASP, Java and 4GL for content creation. The portal supports Apache, iPlanet and WebSphere Web servers and runs on Windows NT/2000, with support for AIX to be followed by HP-UX and Solaris, Gorter said.

Gorter said the advantages of a portal for business integration include the ability to maximize existing assets into a common point of access that can be customized for presentation, authorization and personalization.



Compuware's OptimalView includes a component administration feature.

OptimalView is available at the introductory price of $25,000 per Windows NT server, Gorter said, and eventually will be listed at $35,000.

For developers looking to build portals, IBM last month unveiled the WebSphere Portal Server, an infrastructure for building many types of portals, leveraging WebSphere Application Server and WebSphere Everyplace Suite for device support.

The advantage of the Portal Server, which the company says is at the core of its portal strategy, is that developers can create a single point of access for content, applications and business processes from any wired or wireless device. IBM's portal software offers customization for navigation, personalization and application interaction, as well as user administration and syndicated content access.

Enterprises, the company said in a statement, can create portals that enable mobile users to interact with the information and applications they need to do their jobs. The Portal Server generates both HTML and WML content, which allows it to work with both Web browsers and WAP-enabled devices such as cellular telephones.

WebSphere Portal Server is available on AIX, and support for Solaris and Windows NT is expected this month. Pricing is based on the number of users, but the Portal Server also is available with per-CPU pricing.

Meanwhile, Citrix (www.citrix.com) is making a strong move into the portal market with its $184.6 million acquisition of Sequoia Software, a provider of XML-based portal software. Citrix plans to integrate the portal products into its software to offer users access to information, business processes and applications—whether they are Web-based or Unix or Windows applications.

"Since we introduced the Citrix Nfuse application portal one year ago, customers have asked us to extend its capabilities even further to include Web content, Web applications and Web services," Citrix president Mark Templeton said in a statement. "The portal is the aggregation point for applications and information from disparate systems, which makes it an essential piece of the complete solution."

Under terms of the deal, Citrix will acquire all outstanding Sequoia shares at $5.64 per share in an all-cash tender offer. ▮

MetaApp Framework Looks to Resolve Disruptive Events

iSpheres' development platform utilizes XML/Java APIs for mapping

BY DOUGLAS FINLAY

Developers eager to hit the streets running with Web services without waiting for the final SOAP, UDDI and WSDL standards will find an avenue in iSpheres Corp.'s MetaApp Framework, an XML/Java-based application framework that maps components and then enables the components-as-services to discover other services within business transaction events among trading partners that can resolve supply-chain dilemmas.

"While Web standards are due within four to five years, there are many services available we can componentize today that can use enterprise event management across many trading partners, even though they may not speak the same languages," said Mani Chandy, iSpheres' (www.ispheres.com) chief scientist. He said the challenge for developers is to "take what data is available and map it to a normal customer form without committing to one particular standard," and then specify another form and map it for particular business processes or transactions.

"Developers can now rapidly build reusable components to use as Web services using the framework, irrespective of the data application interchange model that vendors provide," said Santosh Alexander, iSpheres' CEO. He said the framework enables new applications to dynamically bind to other applications, and then the components can be wired into event/response flows and maintained in an ongoing fashion.

The expressed goal is to get a "dynamic, instantaneous reaction to a business disruption," enabling the components to then search other databases to retrieve pertinent information that will resolve the dispute, Chandy said. What will be of interest to developers is a composite event, he continued, using data from different industries and aggregating it. Then, if a manufacturer's supplier runs out of a specific part, Web services components could be automatically triggered to search other data sources to discover another supplier of the part, he said.

Chandy cited two ways in which components gather information from outside data sources. One way is through nonintrusive access in which the component pulls information from a Web page, for example, to find the "event of interest," or metadata telling precisely what the document is about. Another way is to work with whatever tools are available to access the source.

Alexander said the underlying technology involves defining the components and component interfaces; binding them together (such as package trading or inventory levels) once defined; and then once built and bound into underlying services, wiring them together into event/response process flows.

Chandy said once Web standards such as UDDI and WSDL become available, they would be incorporated into the MetaApp Framework.

MetaApp Framework pricing starts at $200,000 per license, and includes tools to define components, bind them and link them together. Additional components such as messaging middleware, data transformation programs, rules engines and work-flow engines are available at extra cost. ▮

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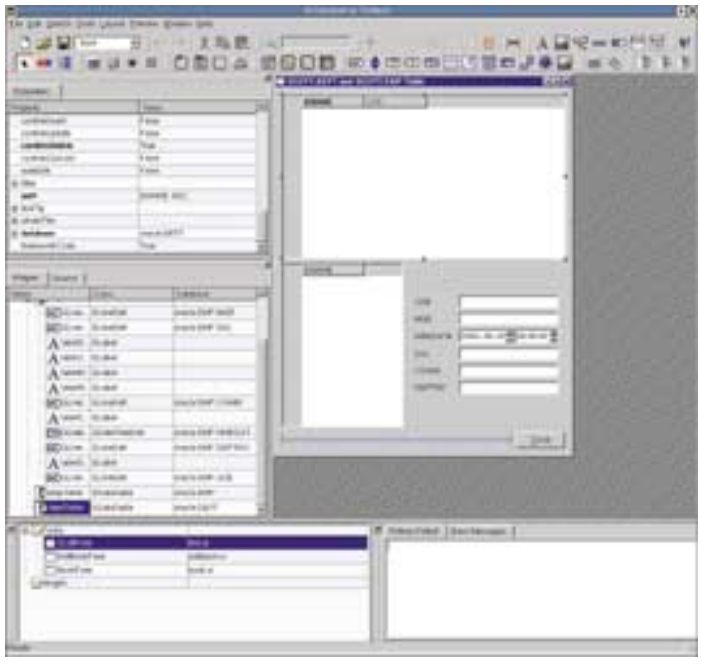
TROLLTECH AIMS FOR THE ENTERPRISE

Enhanced GUI tools support databases, plug-in widget sets

BY ALAN ZEICHICK

Qt 3.0, an updated cross-platform graphical user interface toolkit from Trolltech AS, has just been released into beta, and is expected to be generally available by late summer.

According to Trolltech (www.trolltech.com) CEO Haavard Nord, the biggest change to the C++-based Qt 3.0, over the previous Qt 2.3 version shipped in March, is the enhanced database support. Nord described the new capabilities as a platform-independent, database-independent API for accessing SQL databases, with both ODBC support and database-specific drivers for MySQL, Oracle and PostgreSQL databases. The API is supported by Qt Designer, Trolltech's interface building tool, so that developers can have access to the database during the application-design process.



The enhanced Qt Designer supports rapid application development by directly linking to enterprise databases.

The graphical Qt Designer has also been enhanced, said Nord, to support custom-made widgets, including preview, and allows interactive construction of application windows with menus and toolbars. In addition, the new version offers a plug-in architecture that makes it easier to add new GUI widget sets to the Qt library. "This makes Qt ready for the enterprise," said Nord.

Other new features in Qt 3.0 include an API that lets applications exchange data using HTTP; multiple monitor support under both Unix and Windows; and a platform-independent API for runtime loading of shared libraries and accessing functions using what Nord described as a "COM-like interface similar to ActiveX." International language support now handles right-to-left and bidirectional languages like Arabic and Hebrew.

According to Nord, "We've not even started thinking about pricing yet." The Qt 3.0 runtime runs on Linux, Unix and Windows. ▮

Real-Time Intelligence Scores Over OLAP

IBM's DB2 Intelligent Miner Scoring 7.1 extends database

BY DOUGLAS FINLAY

Tired of the iterative analysis and querying inherent in SQL online analytical processing (OLAP) that ultimately arrives at only one answer per query? IBM claims that its new DB2 Intelligent Miner Scoring (IMS) version 7.1 can provide real-time relational data-mining analyses and scoring based on just one query. In addition to this data-mining feature for developers, DB2 IMS 7.1 follows the Predictive Model Markup Language (PMML) 1.1 from the Data Mining Group to enable the data models constructed to be shared by other data models also using PMML, regardless of the database.

"There is no shortage of analysis tools, but data-mining capabilities such as clustering, classification and neural network analyses go well beyond what OLAP can do," said Jeff Jones, senior program manager for IBM's Data Management Solutions Group. He said integration of DB2 IMS 7.1 into the database engine extends the engine to enable real-time data mining at will against any collection of data. "DB2 IMS 7.1 extends the database engine in the same way there are extenders for text, audio

▸ continued on page 17

A PMML PRIMER

The Predictive Model Markup Language (PMML) is an XML-based language providing a way for companies to define predictive models and share models between compliant vendors' applications. It provides applications with a vendor-independent method of defining models so that proprietary issues and incompatibilities are removed to enable the exchange of models between applications.

It permits users to develop models within one vendor's application and use other vendors' applications to visualize, analyze, evaluate or otherwise use the models. Previously, this was virtually impossible. However, with PMML, the exchange of models between compliant applications now will be seamless.

Because PMML is based on XML, it comes in the form of an XML Document Type Definition. The new language is the creation of the Data Mining Group (www.dmg.org), a vendor consortium whose members include Angoss Software Corp., IBM Corp., Magnify Inc., NCR Corp., Oracle Corp., SPSS Inc. and the University of Chicago's National Center for Data Mining.

—Douglas Finlay

News Briefs

COMPANIES

Borland Software Corp. has released the InterBase 6.0 cross-platform relational database management system certified for Linux, Solaris and Windows operating systems. New features include standard interfaces such as ANSI, JDBC, ODBC and SQL; close integration with Borland tools; scalability to support single users or hundreds of users; and compatibility across NetWare and Unix . . . **TimeSys Corp.** will provide the reference implementation to the Java Community Process expert group for the Real-Time Specification for Java technology, which extends the capability of Java to control the deterministic behavior of embedded systems . . . **i2 Technologies Inc.** and **WebMethods Inc.** have extended their partnership to further comarket the combination of WebMethods' integration platform into both i2's TradeMatrix Network Services and its i2 Trademark Solutions to provide collaboration among trading partners . . . **Lineo Inc.** has signed a letter of intent to acquire **Convergence Integrated Media**. Convergence provides a vertical set of embedded development tools and applications including operating-system ports, drivers, consumer applications, development kits and training for digital media development and deployment . . . **InstallShield Software Corp.** has expanded its consulting services with the addition of Application Migration Practice, which combines a base of software installation expertise with a proven methodology for application migration and management of application conflicts. The practice is designed to help users migrate applications to Windows 2000 . . . **Seapine Software Inc.** has ported its TestPro 3.1 with XML support to the Linux platform, to enable Linux developers to track defects quickly and with more flexibility. The company is developing a Solaris version, expected to ship later this year . . . **Green Hills Software Inc.** has integrated its MULTI software development environment and real-time operating systems with **Rational Software Corp.**'s UML-based Rose design tool and ClearCase source-code control system, all under the Rational Unified Partner Program.

PRODUCTS

Vital Inc. has released its **Crisp version 7.1** visual text editor, which features FTP capability to enable users to edit files residing in a Unix system on their Windows desktop; support for XML tagging; and support for JSP and C#. A free 21-day trial is available at www.vital.com/download.htm . . . Informix Software Corp. has announced general availability of the Linux version of its **Online 5.1** online transaction processing database . . . Alias/Wavefront, a subsidiary of Silicon Graphics Ltd., has ported its **Maya 3D** software suite, including **Maya Builder**, **Maya Complete** and **Maya Unlimited**, to Linux.

PEOPLE

Ted Crouch has joined Curl Corp. as director of software development. Crouch was formerly vice president of product development at Cahners Business Media . . . **Donald L. Reppert** is MicroEdge Inc.'s new president and CEO. He was formerly executive vice president at Passage Software . . . **Karen Burns** has been named vice president of marketing, **Susan Nelson-Crowley** director of product management, and **Bob Worner** vice president of engineering at OpenNetwork Technologies, which develops DirectSmart, a software security program for the health-care industry . . . **Sheila Baker** has joined MontaVista Software Inc. as vice president of marketing. She formerly held the position of vice president of U.S. channel sales for The Santa Cruz Operation Inc. . . . **Eric Schmidt** has stepped down as CEO of Novell Inc., although he will remain as chairman; the company's new CEO will be **Jack Messman**, president and CEO of Cambridge Technology Partners Inc., which Novell is acquiring. Schmidt has also been chosen to serve as chairman of search engine Google Inc., succeeding Google's founder and chairman, **Sergey Brin**, who will now serve as Google's president . . . Software Magazine has recruited **Michael Long** to be its associate publisher, where he will head up sales and marketing activities . . . **Christina Purpi** has joined the staff of SD Times as an assistant news editor. A recent graduate of Hofstra University in Hempstead, New York, Christina served as managing editor of The Chronicle, the school's weekly newspaper. ▮

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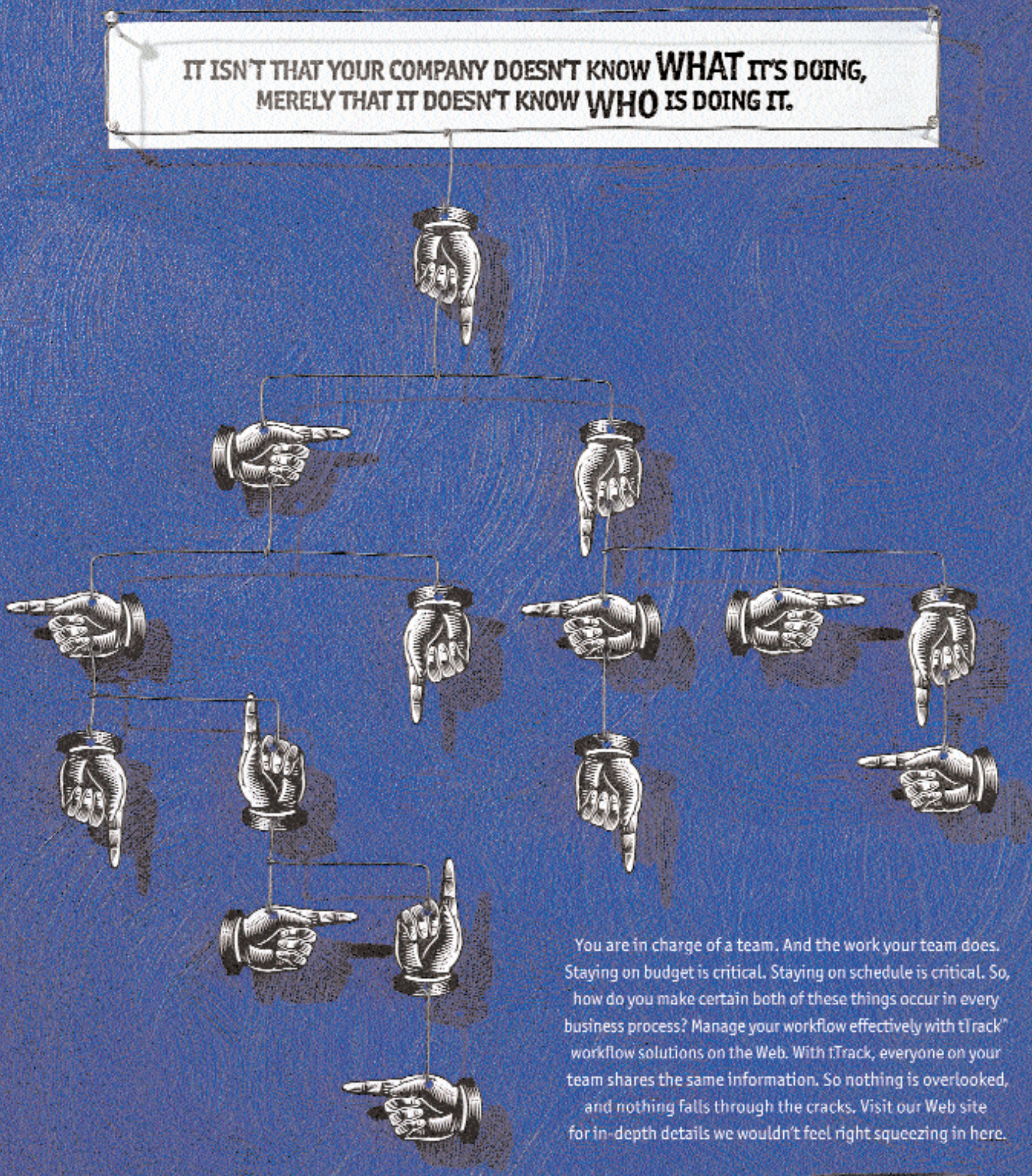
MERELY THAT IT DOESN'T KNOW **WHO** IS DOING IT.



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Cerebellum Revs Up Portal, E-Com Integrators

BY DOUGLAS FINLAY

Cerebellum Software Inc. has upgraded its two Internet data integration products, Portal Integrator and E-Com Integrator, to be fully complaint with Sun's J2EE specifications, according to the company.

Both Portal Integrator 2.2, which does data aggregation and integration in enterprise portals and works with query-based applications; and E-Com Integrator 2.2, which generates persistence or object-to-relational mapping for Enterprise JavaBeans transactions, have added new support for C++ developers. "There's a huge market in Visual C++, which allows us to work with Microsoft developers closely," said Greg Such, Cerebellum's (www.cerebellumsoft.com) product manager.

Another important upgrade is support for mainframe VSAM databases. "We already had support of DB2 files," Such continued, "and we've expanded our offering to mainframe access with support for VSAM." He said new support for VSAM files would help existing customers to access these data files residing within the mainframe and bring them out for use in Web applications.

Version 2.2 of Portal Integrator and E-Com Integrator also feature access to other data sources, such as Lotus Notes and Microsoft's FoxPro databases.

Price is $1,500 per client for Portal Integrator 2.2, and $1,000 per client for E-Com Integrator 2.2. VSAM file support is $5,000 extra. ▮

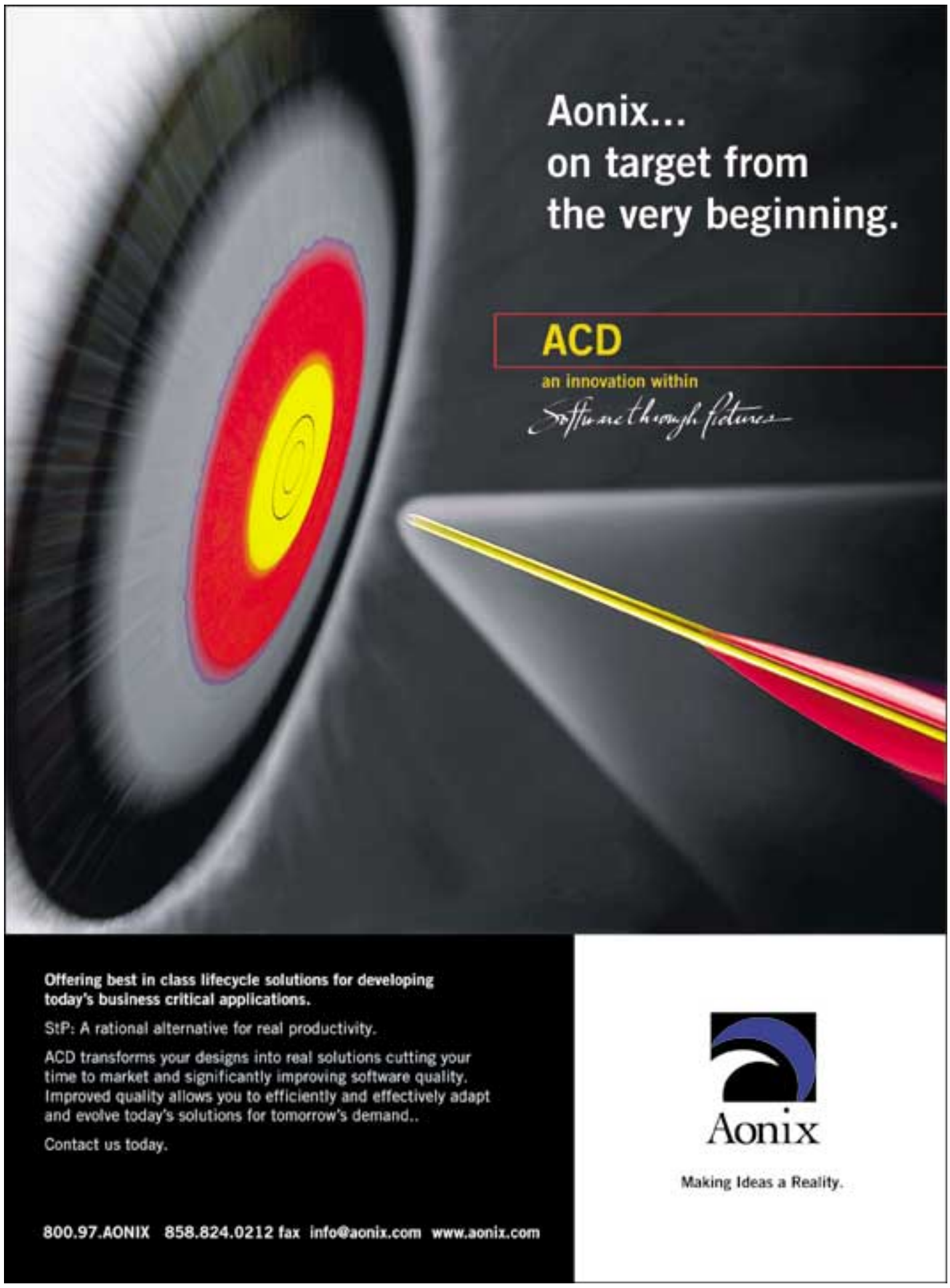
APPLICATION COMPOSER PROMOTES REUSE

WebGain Inc.'s new Application Composer, released the first week in April, is a Java-based graphical development environment that lets developers assemble reusable components into Web-based and business-to-business applications—without, the company (www.webgain.com) claims, the need to write any Java code.

Application Composer utilizes a visual authoring technology for manipulating complex program code, which permits companies to assemble prebuilt components culled from internal and external repositories into enterprise Java applications, enabling even non-Java developers to reuse existing servlets, Java Server Pages, Java beans, Enterprise JavaBeans and Java classes. Applications can also be stored in XML, according to the company.

In addition, Application Composer features line editing to provide real-time feedback on application changes; capsules for defining new components visually, building them hierarchically and increasing their modularity; and advanced debugging for running and testing applications while they are being assembled.

The program further features a built-in Web server, Enterprise JavaBeans container, Java Server Pages engine, and an object-relational database for out-of-the-box development. *–Douglas Finlay*



Vitria's Acquisition to Extend EDI's Reach

BY DOUGLAS FINLAY

With its recent acquisition of XMLSolutions Corp., Vitria Technology Inc. is hoping to garner new-found respect within the growing business-to-business transaction space currently dominated by stalwarts TIBCO Software Corp. and WebMethods Inc.

The deal, which closed early this month, is worth $15 million, of which $8 million was paid to preferred stockholders, and $7 million was used to pay off short-term debt incurred by XMLSolutions. XMLSolutions will become a wholly owned subsidiary of Vitria (www.vitria.com) and will remain at its present location in McLean, Va.

"Vitria saw a way to grow its business-to-business infrastructure, adding to its BusinessWare program for EDI [Electronic Data Interchange]," said Daryn Walters, co-founder of XMLSolutions. He said the purchase would enable Vitria to continue to focus on its many customers using EDI by extending EDI's reach to non-EDI trading partners.

The two companies had formed an OEM agreement several months ago to integrate Vitria's BusinessWare with XMLSolutions' EDI-to-XML translation program—a component of its Business Integration platform—to extend BusinessWare's reach to include some 3,100 predefined translation sets. Walters said work on integrating the two technologies went so smoothly that "Vitria felt it was a logical step to purchase XMLSolutions."

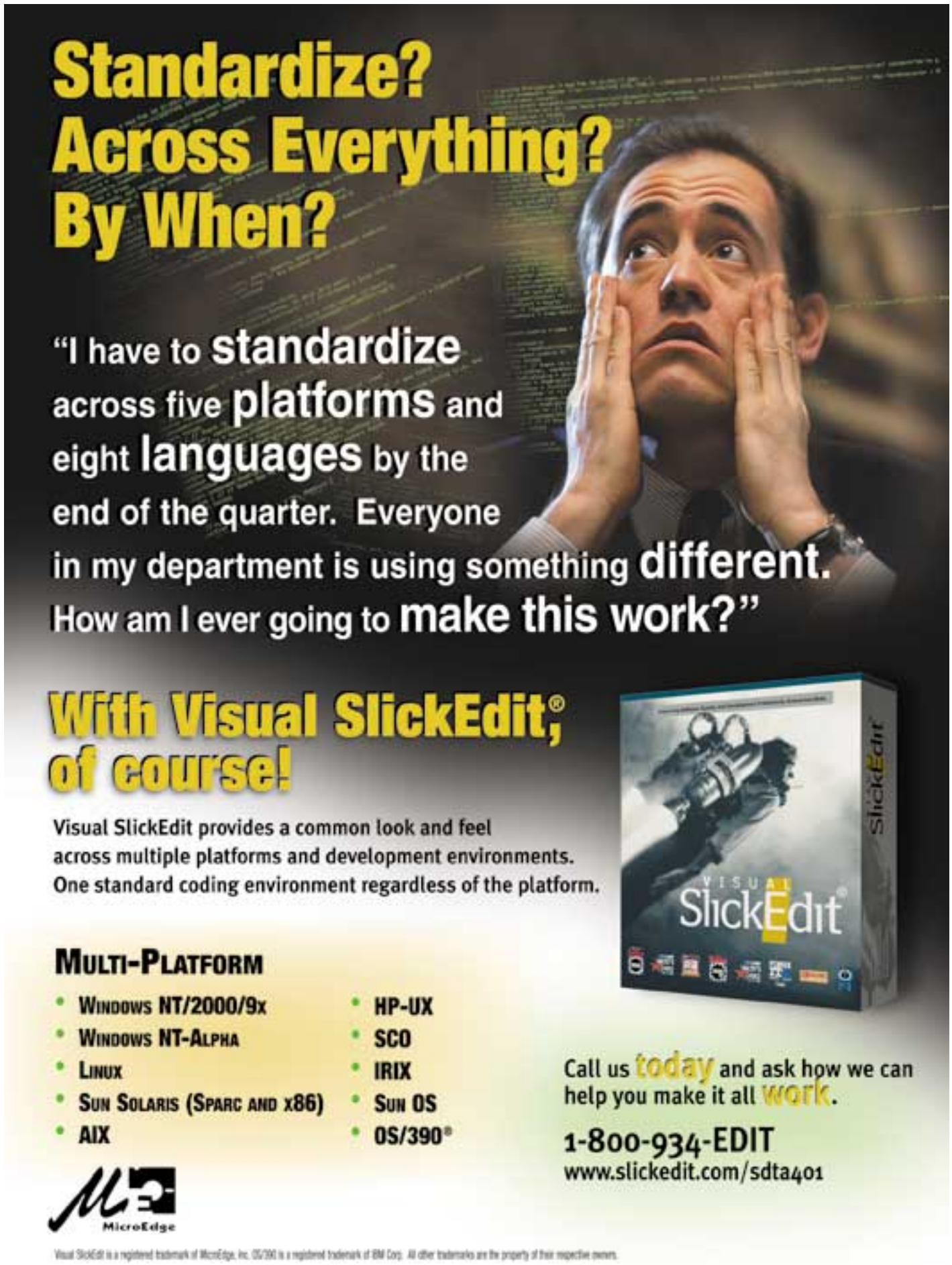
Walters said the acquisition would enable developers using the integrated technologies to provide bidirectional EDI-to-XML translation capabilities to enterprises currently using EDI, adding that such a program would help customers using EDI maintain their long-term investment in EDI. "The acquisition isn't [about] simply offering a better mapping technique for EDI to XML," Walters said, "but about providing 3,100 literal bidirectional transaction sets that are already translated."

The translation program is based on the ANSI X.12 standard and the EDIFACT standards.

But he added that while the translation program would provide the necessary transactional infrastructure, BusinessWare would provide to enterprises the backbone, such as business process models, security, transport, nonrepudiation and strategic planning. In addition, developers would be able to integrate business-to-business back-office systems behind the firewall, he said.

Because of the quick pace in integrating the two technologies, Walters said the company is expected to have a product as early as this month. "It will be an EDI-to-XML back-office integration product," he said.

Phase two of its product development strategy would include tighter integration of the back office, and would be geared toward vertical industries such as automotive and aerospace. He said the company would also work toward creating one-time installations using CDs. ▮



Interbind Message Server Builds Web Services

BY DOUGLAS FINLAY

Interbind Inc. is blurring the distinction between message services and Web services with its release of Interbind XML Messaging Server (IBX) 1.0, which uses SOAP and the Java Message Service (JMS) to expose local applications and resources as Web services, and to connect to remote Web services across the Internet.

"IBX 1.0 builds an object model to enable the client to define in abstract terms where it wants to go, what services it wants to interact with, the number of protocols it wants to interact with and the locations it wants to interact at," said Daniel Seltzer, Interbind's lead developer. He said it is able to access a number of different protocols by taking the variations of the differences of each protocol and placing them in an access descriptor, which describes attributes such as the types of Web services sessions and their locations.

Seltzer said the growing richness of messaging services lets Java developers build or use publish/subscribe services and point-to-point services without the need for specific APIs. This creates a logical pairing between JMS and Web services, which expose data at one point for consumption at another point. "These two sets of functionalities are suited for one another because they depend on one another," he said.

He said that with IBX's support for both JMS and SOAP, companies could now expose corporate data to business partners. "Developers would download IBX, set it up to have application code pull queries from the databases, then take that code and wrap it up, and create a service using the IBX server."

To expose the data, developers would then use the XML configuration file to configure what transport and message protocols they want to send it to, and then send it.

A no-cost demonstration version of IBX 1.0 will be available this month; deployment will be priced at $1,500 per CPU. In October, Interbind (www.interbind.com) plans to release a $7,500 per-CPU enterprise edition, which will offer encryption for XML messages and tight integration to mainstream application servers. ▮

EXPRESSO

◂ continued from page 1

che Xerces XML parser and the Xalan XSL transformation tool. Further, Apache's Log4J logging subsystem now enables rapid analysis and debugging of applications.

Also added to version 3.0's Web applications functionality is a new Java Server Pages library for accelerating GUI development.

Nash said applications developed using version 3.0 could easily be scaled up into distributed environments and integrated with J2EE technologies.

The licensing fee for Expresso Framework 3.0, which is available immediately at www.jcorporate.com, is $999 with support, Nash said. ▮

Sun Opens JMF Multimedia Code

BY DAVID RUBINSTEIN

Sound up. Rolling. Ready, and…action!

Development teams looking to add multimedia support to their Java applications now have a tool to do it, as Sun Microsystems Inc. last month released the binary source code for Java Media Framework API 2.1.1.

Sun describes JMF as an optional API for the Java 2 Standard Edition platform, which can be added to the platform as a separate download from http://java.sun.com/products/java-media/jmf/2.1.1.

"This is the framework for adding audio and video into Java applications and applets," said Michael Bundschuh, engineering manager for the JMF Group at Sun. "Customers are using it for video conferencing and kiosks, among other things."

When JMF 1.0 was first released in August 1997, Bundschuh said, it dealt primarily with playback capabilities. The 2.0 version, put out in November 1999, added capture and streaming capability. The 2.1.1 code is being made available under the Sun Community Source Licensing program.

Bundschuh said JMF is being released in four packages, from a base JML written in Java to performance packages that add functionality for Linux, Solaris or Windows operating systems. With JMF 2.1.1, developers can extend the Java platform to include media processing and support for MP3, Real-time Transport Protocol and Real-time Streaming Protocol, Beatnik's Rich Media Format, IBM's HotMedia and Macromedia's Flash. The open architecture gives developers the ability to work on components such as effects and tracks, or to use their own plug-ins. ▮

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DART Eases Solaris-to-Linux App Migration

BY DOUGLAS FINLAY

Following in the footsteps of its recent release of the Downloadable Assessment Reporting Tool (DART) for helping migrate 32-bit Windows applications to Intel's 64-bit Itanium processor, MigraTec Inc. has released a new DART utility that reveals issues developers can expect when migrating 32-bit C/C++ Solaris applications to the 32-bit Linux operating system.

"Many developers may not know what it takes to migrate applications from Solaris to Linux," said Simon Mak, MigraTec's vice president of marketing. He said the new DART focuses on three generic issues: functional APIs unique to Solaris; Posix compliance issues; and issues specific to Solaris networking that may not be issues in Linux.

Mak said DART offers rough estimates of the issues by reading the number of code lines per file involved and the number of files involved, and issuing a sampling of the number of files and lines of code in need of adjustment.

The DART utility is available for free at www.migratec.com/DARTBoard. ▮

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Mac OS X

An Overview for Developers

With Mac OS X, Apple asserts its leadership in the advanced technologies and design sensibilities that are the hallmarks of any great operating system.

Mac OS X is a completely rebuilt implementation of the Macintosh operating system. It expands on Apple's technological strengths, such as industry-standard networking capabilities and industry-leading user interface design.

More importantly, Mac OS X combines those strengths with support for a variety of technologies beyond those typically associated with the Macintosh, such as UNIX and Java 2 Standard Edition. This unique combination of technologies offers developers stability, power, and interoperability, beneath a well-designed, elegant, and intuitive user interface. As a result, Mac OS X presents new opportunities for both development and deployment.

Darwin

The stability of Mac OS X begins with Darwin, the open source core of the system. Darwin integrates a number of technologies, including the Mach 3.0 kernel, operating system services based on BSD UNIX, high-performance networking facilities, and support for multiple integrated file systems. Further, Darwin's modular design lets developers dynamically load such things as device drivers, networking extensions, and new file systems.

Apple and Open Source

Apple is the first major computer company to make open source development a key part of its ongoing software strategy. The core of Mac OS X, Darwin, is itself an open source project. This approach to operating system development allows developers and students to view the Darwin source code, learn from it, and submit suggestions and modifications. Developers can participate in the Darwin open source project by signing up at **http://www.opensource.apple.com**.

Darwin's advanced memory protection and management system ensures reliability by allocating a unique address space for each application or process. The Mach kernel augments virtual memory semantics with the abstraction of memory objects. This enables Mac OS X to manage separate application environments simultaneously, while presenting users with a seamless experience.

Darwin also supplies the following advanced functionality:

- Preemptive and cooperative multitasking.
- Symmetric multiprocessing (SMP) augmented by support for multithreading.
- Real-time support guaranteeing low-latency access to processor resources for time-sensitive media applications.
- An object-oriented device driver programming framework called I/O Kit.

Graphics System

Mac OS X combines three powerful graphics technologies, Quartz, OpenGL and QuickTime, enabling developers to push graphics beyond anything users have seen on a desktop operating system.

Mac OS X system architecture

Quartz

Quartz is the foundation of the Mac OS X imaging model. It is comprised of a high-performance, lightweight window server and a graphics rendering library for two-dimensional (2D) shapes. The window server features such advanced capabilities as device-independent color and pixel depth, layered compositing, and buffered windows for the automatic repair of window damage.

The Quartz rendering model is based on the cross-platform Portable Document Format (PDF) standard, enabling developers to easily embed and manipulate PDF data within any Mac OS X application. This yields such benefits as automatic PDF generation and save-as-PDF, automatic onscreen preview of graphics, conversion of PDF data to printer raster data or PostScript, and a consistent feature set for all printers.

The layered compositing engine used by Quartz allows developers to create unique onscreen effects. It replaces the "switch model" of traditional windowing systems with a "video mixer" model in which every pixel on the screen can be shared among windows in real time. This model allows for smooth transitions between the states of the graphical user interface.

Quartz also provides developers with these advantages:

- On the fly anti-aliasing of graphics and text enabled by the use of a floating-point coordinate system and high-precision vector processing.
- Direct access to the video frame buffer.
- Automatic detection of and benefit from the floating-point coprocessing performed by the Velocity Engine in PowerPC G4 microprocessors.

OpenGL

For three-dimensional (3D) graphics, Mac OS X features an optimized implementation of industry-standard OpenGL. OpenGL is one of the most widely adopted graphics standards today, making code written to OpenGL extremely portable and making generated visual effects highly consistent. It is specifically designed for games, animation, CAD/CAM, medical imaging, and other applications that need a rich, robust framework for visualizing shapes in two and three dimensions.

QuickTime

Mac OS X comes packaged with the latest version of QuickTime, a powerful multimedia technology for manipulating, enhancing, and storing video, sound, animation, graphics, text, music, and even 360-degree virtual reality. It also allows streaming of either live or stored digital video. As a cross-platform technology, QuickTime can deliver content on Macintosh and Windows systems. Augmenting its cross-platform capabilities, QuickTime supports every major file format for images and every significant professional file format for video.

Through the QuickTime plug-in, QuickTime's digital video streaming capability is extended to all popular web

browsers. The plug-in supports over thirty different media types and makes it possible to view over 80 percent of all Internet media. QuickTime also features other advanced web streaming capabilities, such as movie "hot spots" and automatic web page launching.

User Interface

The most visible expression of Mac OS X power and technology is its new user interface, Aqua. Apple applies its leadership in user interface design to Aqua, incorporating many of the qualities and characteristics Macintosh users expect, while adding advancements to benefit expert and novice users alike. Ease of use is factored into every feature and capability.

Consistent with Apple's design philosophy, visual enhancements serve not just as beautiful images, but as cues to the functionality and operation of the system.

A prime example of this user-focused design is the use of "sheets." These non-modal dialog boxes attach directly to the title bar of the relevant document, intuitively linking document and action. The non-modal nature of sheets prevents applications from hijacking the system and interrupting user workflow.

Interoperability

Mac OS X makes unprecedented use of technologies and standards that allow interaction with other platforms. This affords both developers and users the opportunity to use Macintosh computers in new places and in new ways. Mac OS X manages multiple file and networking formats and supports a wide range of industry-standard protocols. Based on an enhanced VFS design, the file system supports multiple local formats and complies with POSIX file system semantics.

Hardware connectivity is simplified through built-in support for Ethernet (10/100/1000Base-T); serial connections for modems, ISDN, DSL; wireless networking through AirPort (IEEE 802.11); USB (Universal Serial Bus); and FireWire (IEEE 1394).

Java 2 Standard Edition

Mac OS X ships with a complete implementation of Java 2 Standard Edition (J2SE) version 1.3, including the HotSpot client virtual machine. Benefits of Apple's Java implementation include access to Aqua user interface elements "for free" through Swing, native preemptive multitasking, automatic multiprocessing support and management of JAR files as shared libraries.

This last advance improves the speed of execution and reduces the RAM footprint of applications which rely on the same archive, such as applications within suites. Mac OS X also plugs the Java windowing toolkit more directly into the Mac's native windowing toolkit, giving Java applications and applets the graphics performance benefits of Quartz.

Backward Compatibility

To afford users a gentle migration path, Mac OS X builds on Darwin's ability to manage multiple application environments simultaneously. The Classic environment is actually a full version of Mac OS 9.1 running in a protected memory space under Mac OS X. As a result, most Mac OS 9 compatible applications will run side-by-side with Mac OS X applications.

Additionally, developers can code for Carbon, a native Mac OS X environment that allows programmers to take advantage of advanced Mac OS X features while retaining compatibility with the installed base of Macintosh computers running Mac OS 8.1 and later.

Development Options

There are multiple ways to develop for Mac OS X. Individual skills, preferred languages and tools, target user base, and time to market concerns will influence a developer's approach:

Carbon

The Carbon APIs are based on earlier Mac OS APIs. While Carbon allows applications to take advantage of Mac OS X features such as multiprocessing support and the Aqua user interface, Carbon is specifically designed to allow compatibility with older versions of the Mac OS.

Cocoa

The Cocoa application environment runs natively under Mac OS X. For those who wish to develop for Mac OS X using rapid application development (RAD) tools and object-oriented techniques, the Cocoa frameworks provide a fast and complete way to do so. These frameworks offer both Java and Objective-C APIs.

Java

The Java application environment allows development and execution of Java programs on Mac OS X, including 100% Pure Java applications and applets. The J2SE implementation in Mac OS X is designed to allow maximum Java application portability. Developers can also use the Java development language to write a Cocoa application, allowing Java programmers to use a familiar language to develop for a new platform.

UNIX

Since Mac OS X is built atop a UNIX kernel, porting UNIX-based applications to the platform is relatively easy. This enables enterprise-level UNIX products to enjoy parity with consumer and business applications on a commercial desktop platform.

Mac OS X offers opportunities for developers from many different backgrounds to port and build innovative and compelling applications.

And the best way to get started is with the Apple Developer Connection:

Apple Developer Connection membership programs offer benefits such as prerelease software seeding, code-level technical support, news and technology updates, and discounts on business support services. Developer documentation and resources are available free at **http://www.apple.com/developer**.

To learn more about developing for Mac OS X, visit the Mac OS X development website at **http://developer.apple.com/macosx**.

To request a free **Programming for Mac OS X CD-ROM** containing tutorials, sample code, and technical documentation designed to provide step-by-step descriptions of the methods developers can use to create Mac OS X applications, visit **http://developer.apple.com/sdtimes.html**.

ADC
Apple Developer Connection

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Hyperion Unveils Java Analysis Tool

BY DAVID RUBINSTEIN

Building OLAP applications in Java has been a roll-your-own situation, as most native online analytical processing tools and applications have run on Windows. Looking to change that, Hyperion Solutions Corp. has unveiled Hyperion Application Builder, which it claims is the first business analysis application development tool designed specifically for Java 2 Enterprise Edition.

"Other [tools] are wrappers or APIs against OLAP," said Robert Kemper, general manager of Hyperion's tools business unit. "We wanted something that fits more deeply into the framework, to be sure [customers] could combine business analysis with their IT corporate product line. Our business is business analysis, not to build application servers."

In fact, Kemper said, Hyperion (www.hyperion.com) has initiated a Java OLAP (JOLAP) API specification and is trying to drive it through the Java Community Process for acceptance as an industry standard. The spec request has been accepted and is expected to be available for participant review as a draft specification at the end of June.

Most of Hyperion's customers have been Windows-based operations, Kemper said, adding the company was "not comfortable" with a nonstandards-based approach to entering the enterprise OLAP market. He added that Hyperion will continue to support Microsoft and will assess the reception of the .NET strategy, but acknowledged that J2EE will become the foundation on which Hyperion wants to grow.

Kemper said it has been his experience that most corporate data centers run on high-end Unix machines "and Java gets us there quickly." Hyperion Application Builder is targeted for Web deployment, he noted, saying it can run as a Java applet through a browser, allowing developers to build apps on a middle tier and deploy across multiple platforms. "Building on the middle tier makes it easy to rev apps," Kemper said. "Users don't want to have to update 30,000 user boxes throughout an organization."

Application Builder is designed to extend Hyperion's Essbase—its OLAP server—into enterprise-scale deployments in the Java development community. "Application Builder has native drivers that talk to all versions of Essbase, and we want to make sure we can support the new APIs going forward." Although Application Builder is being released as a 1.0 product, Kemper said, it is actually "the third or fourth release" of a product Hyperion has been using in-house for a couple of years.

Phillip Powell, vice president of product development at Targetnet, an interactive advertising management firm, said Application Builder generates information from the database onto a user interface "but didn't restrict how we developed the interface. It was critical that we not lose creative control over the UI."

Hyperion Application Builder is available now at $15,000 per server license, $300 per named user and $1,200 per concurrent user with no per-developer charge, according to Jeff Pinard, director of development for Application Builder. ■

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Unix, Linux Do Business

Caldera creates platform that merges kernels

BY DAVID RUBINSTEIN

The acquisition by Caldera Systems Inc. of the server software and professional services divisions of the Santa Cruz Organization has resulted in the first real merger of the Linux and Unix platforms and in a name change for the company, Caldera announced late last month.

The company, to be called Caldera International Inc., this summer will release Open Unix 8, which will allow Linux applications to run on Unix by providing a complete Linux environment through the Linux Kernel Personality (LKP) in the next release of the UnixWare 7 kernel, the company said.

"Open Unix 8 is the first step in implementing the vision of the pending new company," Ransom Love, Caldera Systems (www.calderasystems.com) president and CEO, said in a statement. "It combines the heritage of Unix with the momentum of Linux."

Caldera will build many of the same tools and libraries used in its OpenLinux implementation into Open Unix 8 that were created to support the proposed Linux Standards Base specification, the company said. "We are unifying Unix with Linux for business," said Dave McCrabb, president of SCO's Server Software Division, who will be joining Caldera as COO once the acquisition is complete.

After the acquisition, which is expected to be finalized before the end of June, Caldera will focus on helping companies to develop, deploy and manage unified Linux and Unix platforms and applications. Love said, "The goal of Caldera Systems from its inception was to make Linux the alternative business platform in the industry."

Love will serve as the chief executive of the new company. ■

GEODESIC RELEASES REMIDI 5.0

Sharpening its tool that measures the reliability and performance of Web-based applications, Geodesic Systems Inc. (www.geodesic.com) has released Remidi version 5.0 with wider platform support and in four configurations.

Remidi is a runtime utility that monitors applications and the operating system in real time, the company says, and can automatically find and fix software errors that cause applications to crash. By watching the operating system for problems such as memory leaks and memory overwrites, the company says, applications can be made "self-healing," and more resistant to crashes and other failures. Applications do not need to be rewritten or modified in order to benefit from Remidi's services.

Remidi 5.0 can be obtained in high-availability and high-performance configurations for both single-processor and multiprocessor formats, according to the company. Also, Remidi 5.0 supports AIX, HP-UX, Red Hat Linux, Solaris, Tru64 Unix and Windows.

–David Rubinstein

DB2 IMS

◂ continued from page 5

and video," Jones said.

Although he said that data mining and querying run hand-in-hand in OLAP, in that mining is done to validate certain queries to take them to the next level, similarities end there because, with data mining, "developers don't know in advance what they will be looking at when they construct the query." He said in iterative analysis all questions are well known in order to draw out a specific response. "Data mining features more complicated algorithms for neural networking, clustering, segmentation and classifications that are ahead of where OLAP is," Jones continued.

Because of its ability to deduce patterns in data in real time from queries, integrating scoring into the database engine to data mine "eliminates the notion of data mining that requires mainframes, overnight batch runs and tremendous amounts of data," Jones said.

Dan Vesset, senior analyst at IDC Corp., said the idea of DB2 IMS 7.1 is to bring data mining to developers rather than keeping it in the hands of a few statisticians and Ph.D.s who until now have had the role of interpreting the data. "Just using OLAP and queries is not enough. Developers could embed data mining into customer relationship management systems to look for patterns indiscernible to the eye," he said.

Jan Mrasek, senior manager for business intelligence solutions at the Bank of Montreal, said the bank currently uses DB2 IMS 7.1 as a discovery process, to learn about customer behaviors and how the bank might determine which kinds of products it can offer customers based on those behaviors. He said developers build data models and then translate them into PMML and pass them onto the DB2 database. "It executes the model scoring in parallel over 12 processors." He said it automates the scoring process by helping define structures, thus eliminating heavy transformational work.

Available immediately, DB2 IMS 7.1 costs $15,000 per CPU. An Oracle cartridge for the company's 8i database is similarly available at $15,000. ■

Unified Process Gets BEA Add-In

Rational Software Corp. has created an add-in to its Unified Process for BEA Systems Inc.'s WebLogic Server 6.0, providing developers with guidelines for organizing projects and managing code within the application server.

"Our customers using BEA's WebLogic Server were not having problems with the technology,' said Kurt Bittner, Rational's director and general manager of the Unified Process Business unit, "but wanted to know how to organize projects, how to approach requirements, how to approach the management of code and how to develop iteratively in WebLogic."

He said Rational added detailed guidelines for designing and implementing both WebLogic Server applications and J2EE applications to current RUP features. Sun Microsystems Inc. partnered in the agreement to help Rational add J2EE application advice into the RUP.

The free add-in is available at www.rational.com/partners/alliances/bea/index.jsp or at http://developer.bea.com/tools/techguides.jsp. *–Douglas Finlay*

I-DRIVE

◂ continued from page 1

(ESS), which is a hosted storage service that provides a file-sharing and document-management infrastructure for Web-connected PCs and other devices.

According to Tim Craycroft, I-Drive's CEO, the release of the ESP marks an important step toward the company's future. "Our primary channel right now is large service providers—the ISPs and telcos—and we're selling not only the platform, but a set of applications for their individual and business subscribers," he said, including file management and file sharing, similar to those found on any desktop computer. "But it's vertical applications that the platform is really meant to enable," he said.

And while Craycroft conceded that competitive solutions exist that enable storage of raw files, he said the I-Drive solution offers something the others don't. "There are a ton of existing raw storage solutions, but they don't provide an application layer—an enabling layer. That's what our value is. I would argue that currently there is no exact competition for what we're creating."

Craycroft said his company's solution is roughly analogous to a Windows-running computer and its hard disk drive. "ESP is that same middle layer to network-attached storage on a much larger scale." And although ESS provides no desktop, per se, he said, "we do have a set of applications that allow for file management, printing, faxing and those sorts of things." ESP provides developers with a set of resources associated with file storage and access through operating-system-like primitives, which include user accounts, authentication, physical and logical files, sharing privileges and bandwidth allocation.

Also unique, said Craycroft, is its peer-to-peer file sharing, which allows direct transfer of any file from one account to another. And efficiencies in file storage prevent redundancy. "We store only one copy of every shared file, no matter how many people have access to it. The best evidence of the value is on our free service, where we store over a petabyte of logical data but actually store only about 25 terabytes of physical data because of the sharing."

Data stored in the I-Drive system is placed in an Oracle database, said Craycroft. "It's not just slapping files into directories and associating them with users. The greatest value is the database layer we've created for associating attributes—or metadata—and attaching structured data that is not intrinsic to the file itself." This is the key feature, claims Craycroft, that enables ESP's vertical application capabilities. Because for developers building a document work-flow system, for example, "you need to associate structured data along with the file itself, such as who owns the file now, who it is supposed to go to next," and so on.

Available now for free in limited release, the ESP SDK includes libraries for C and Java that can be used for servers and mobile devices, sample code, and test accounts that can be used in a staging environment set up for development. E-mail support is also provided with the free version. General availability is scheduled for June.

The ESS hosting service costs between $1 and $2 per user per month. For self-hosting, prices are negotiated individually. Server components are written in Java and, according to the company, have been qualified for Solaris and Windows NT. ▮

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CA Goes Wireless

Company extends enterprise apps to mobile devices

BY EDWARD J. CORREIA

In its first major move into the wireless space, Computer Associates International Inc. has announced its Mobile eBusiness Initiative, a plan to extend its enterprise software solutions to a variety of mobile devices, including those based on Java, Palm OS, Windows CE and WAP. According to the company, many enterprise applications currently in use will now be accessible to mobile users with just a recompile.

"It's really our coming-out party," said J.P. Corriveau, CA's senior vice president of business alliances. "Some of the technologies have been released over the past six to 12 months, but this announcement is the culmination of all those efforts and partnerships."

And there are many partnerships. "We know we can't do it alone. CA is not an island trying to roll out a wireless infrastructure." Instead, Corriveau said customers will have access to third-party software tools and consulting services. Hardware partners include Kyocera, Motorola, Nokia and Symbol Technologies.

"You can't just get a wireless framework and throw some developers at it," Corriveau said. "With the solutions integrators in place, you can either put the parts together yourself or go to one of these integrators to get CA solutions."

Taoling Xie, CA's (www.cai.com) director of Mobile eBusiness brand marketing, described some of the issues facing companies when deploying mobile solutions: "The major challenges include the need to expand infrastructure to mobile users, to develop new applications using existing skills and logic from existing applications, to contain maintenance costs and to ensure security. We'll be playing where we play the best, which is in the back end, connecting all the back-end systems and applications to the front end with gluelike integration capabilities."

This is the culmination of many efforts, says CA's Corriveau.

Some of that glue comes from CoolPlex, CA's model-based application development environment. According to Xie, using CoolPlex is as simple as "mastering certain rules to define logic blocks. Underlying code generators semiautomatically generate code for you for different platforms, including Java, Unix, Windows, AS400 and other midrange and mainframe computers."

Now CoolPlex has been extended to include mobile coding capabilities through a partnership with software tools company Soft Designs, maker of Websydian (www.websydian.com). Working as a plug-in to CoolPlex, the environment also will generate code for iMode, HTML and WML, Xie said.

And according to Corriveau, developers already using Websydian will notice no difference. "If you have a CoolPlex application that's been on Windows or a Web site until now and you want to go wireless with it, you can do that simply by rebuilding the application. No new development needed." Corriveau added that another advantage to the environment is that through the use of application templates, "the same template can be used not only for Nokia, but for Motorola phones, Palm devices and Windows CE-based Pocket PCs." Websydian has been endorsed by Nokia as a development tool for use with its handheld smart phones.

CA's Mobile eBusiness Initiative will be rolled out in two phases. The first phase, announced in March, will include capabilities aimed largely at IT departments, including software delivery and synchronization, asset management capabilities, a management infrastructure that extends CA's Unicenter to mobile devices, and the CoolPlex coding enhancements for mobile devices. The second phase will focus on deployment of vertical-market applications, including ASPs and telecoms.

Pricing is based on server and mobile device type, and linked to device volume and usage. ■

Acquisition Marks Shift in I-Logix Strategy

iNotion portal central to new component-sharing scheme

BY EDWARD J. CORREIA

Broadening its focus from programmers to the enterprise, software tools company I-Logix Inc. has announced the acquisition of iNotion, a Web-based enterprise project management portal developed by KLA-Tencor Corp., which supplies process control solutions for the semiconductor industry.

According to Neeraj Chandra, senior vice president of marketing and corporate development at I-Logix (www.ilogix.com), these tools will transform his company. "With this acquisition, we are dramatically enlarging our scope in the market and the value we bring from product development to the project-management life cycle. So we have changed our value proposition from 'concept to code,' to what we call 'requirements to revenue.'"

Our value proposition is now 'requirements to revenue,' says I-Logic's Chandra.

Chandra said that for companies developing software, "you have a whole set of additional issues to deal with," beyond the scope of the development team. To illustrate the point, Chandra indicated that at the time of the acquisition, iNotion, which up until now was a proprietary solution, was being used at KLA-Tencor by more than 2,300 people, of which only roughly 400 were software developers.

Building a case for the need for organized project management, Chandra cited the findings of a study conducted last October by Electronic Market Forecasters that found that more than half of all software development projects are late, on average by nearly four months. "And if you look at the growth of the computing marketplace, [four months] is a significant portion of the product life cycle," he said, asserting that iNotion is not a solution in search of a problem.

Chandra said that unlike the tools offered by competitors such as Artisan and Rational, which focus on requirements, design and testing, iNotion adds the ability for groups outside the development circle, such as marketing and support, to use the tool. "You have an opportunity to have a view into enterprisewide activity at any level you choose, be it at the organization, a project, a product or even an artifact."

But perhaps the most significant value of iNotion, Chandra said, will be its tight integration with Rhapsody, the company's UML-based development environment. "With the combination of the two, a person can browse for an adequate component, download it in Rhapsody to simulate and see its behavior and functionality, and then make a decision if this is the right component."

I-Logix revealed its commitment to simplifying component reuse among Rhapsody customers in March when it announced a three-phase approach to improving its UML-based development environment and its collaborative capabilities.

Rhapsody 3.0 currently permits developers to componentize, document, collaborate and reuse software modules and view them in a UML graphical model, regardless of their geographical location. According to the company, the first phase will improve these capabilities and extend them to design models.

In the second phase, I-Logix will seek to establish a so-called component signature, which will provide a way to uniquely identify, characterize and document components, simplifying the process of searching for software to incorporate into a design.

The final phase will be to provide a Web-based infrastructure for organizing and cataloging the components and encouraging collaboration, of which iNotion will be an integral part. The new features will be phased in over the remainder of this year, with iNotion scheduled for general availability in early 2002. An early release of iNotion was scheduled for this month. Pricing has not yet been set. ■

SIMPLEPAD 'SLEDS' INTO PALM V MARKET

BY EDWARD J. CORREIA

Hoping to find an instant customer base among the thousands of Palm OS developers, SimpleDevices Inc. has released the SimplePad Development Kit, a hardware and software development kit for Palm Inc.'s Palm V and Vx handheld computers that the company claims will permit enterprise developers to build wireless LANs and applications for the mobile devices.

The SimpleDevices (www.simpledevices.com) product line centers around SimpleServe, an application that allows any computer to act as a streaming media and data server for wired and wireless systems running its client software, which can include Internet appliances, thin clients and now the Palm V.

The development kit includes the SimplePad "sled," which attaches to a Palm V and provides the 1.6Mbps network link. Also included is a Proxim Symphony HomeRF USB adapter, which supplies the wireless networking base through a Windows computer that also runs the included SimpleServe network manager application. For developers who order the optional Palm Vx with the kit, the company says all necessary software is preinstalled and configured.

The development kit comes with or without a Palm Vx.

According to Lou Hughes, co-founder and CEO of SimpleDevices, the Palm OS was a natural starting point for its foray into the handheld market. "With [Palm OS having] more than 75 percent of the market, we designed the kit to help us tap into this tremendous resource." The hardware and software company was launched in 1999.

Pricing for the SimplePad Development Kit, available now, starts at $1,500 with a Palm Vx, or $1,100 without. ■

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Metrowerks, I-Logix To Swap Features

CodeWarrior gains UML tools; Rhapsody gains new targets

BY EDWARD J. CORREIA

Features will be flying all about the place. Embedded development tools makers I-Logix Inc. and Metrowerks Inc. have agreed to integrate their respective Rhapsody and CodeWarrior development environments, with CodeWarrior picking up UML modeling capabilities, and Rhapsody developers gaining access to Metrowerks target architectures and the CodeWarrior user interface for editing code. The announcement was made at the Embedded Systems Conference last week.

Having Metrowerks as a reseller opens distribution channels for I-Logix, says McElroy.

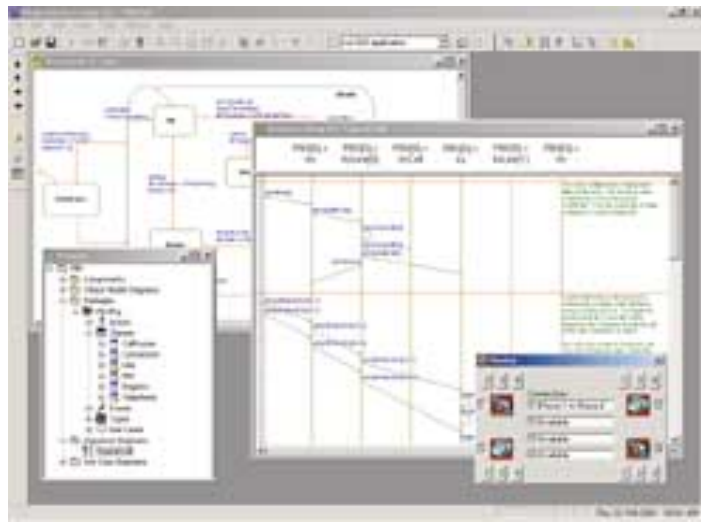
Initially, the plan will be simply to bundle the two products together, but according to John Smoulcha, vice president of marketing at Metrowerks (www.metrowerks.com), the ultimate goal will go much deeper. "Our desire is to create a fully integrated solution using the CodeWarrior IDE and the I-Logix design automation solutions to make development much more convenient," he said, adding that "design automation and debugging work will be made easier," once integration is complete sometime in the second half of this year. Design modeling lets engineers piece together systems using a graphical interface; very little knowledge of coding is required.

The first Rhapsody version to be integrated will be Rhapsody in MicroC, which is used primarily by engineers designing microcontroller-centric embedded systems. Metrowerks will become an authorized reseller of Rhapsody and will bundle the tool along with CodeWarrior while integration is under way.

According to Jim McElroy, director of Rhapsody product marketing at I-Logix (www.ilogix.com), the agreement gives I-Logix instant access to a substantial customer base rich with embedded developers. "It's great news for us from a channel perspective. Being a wholly owned subsidiary of Motorola, Metrowerks as a reseller opens up a lot of different avenues for us in terms of distribution," he said.

The advantages to Rhapsody developers, McElroy continued, will be an increase in supported targets. "They will have access to CodeWarrior's entire compilation suite and the platforms, architectures and operating systems they are targeting," he said. "So the idea is that Rhapsody developers can push a button, generate code, compile and link it and download it into any of their targets using the Metrowerks environment." McElroy added that developers working at the code level also will have a choice of using their existing Rhapsody editor or the CodeWarrior editor.

And for CodeWarrior developers, McElroy said the major advantage is the productivity gained by modeling. "They can now move their level of development up to the UML modeling approach; so no longer do they have to work purely at the code level. They can work either at the code level or graphical level inside of Rhapsody," he said.



Rhapsody's UML-based system design will soon be available in CodeWarrior.

Next in line for assimilation will be Rhapsody C, C++ and Java versions and the PowerPC version of CodeWarrior, which Metrowerks' Smoulcha said also are scheduled for the second half. Pricing has not been announced, but according to McElroy, the companies are formulating an introductory pricing plan to "make it very attractive to all of the Metrowerks customers to move up to the modeling environment." ▮

Arcom Flashes QNX on Development Board

BY EDWARD J. CORREIA

When QNX last fall announced that it would begin giving away its RTOS for free for noncommercial development, its strategy was to build a large community of developers. Helping that cause is embedded hardware manufacturer Arcom Control Systems, which has released a development kit that includes the QNX real-time platform preinstalled in flash memory.

The SBC-Geode-GXm is a Pentium 233MHz-based single board computer that reportedly delivers video, Ethernet, USB, touch screen, audio and serial interfaces, plus a PC/104-Plus expansion interface. Also included is a flash disk loaded with the QNX RTOS, QNX microGUI and the Voyager browser.

Arcom's development kit will boot QNX out of the box.

According to Frank Pellitta, vice president of sales and marketing at Arcom (www.arcomcontrols.com), there are advantages to receiving a bundled solution. "We have taken the time to match the hardware and the software so that the engineers can spend their time developing application code and not worry about the hardware platform and the OS working together," he said.

The kit, which is targeted at developers of embedded industrial and machine-control applications, also includes a CD with the QNX real-time platform software and one noncommercial development license, sample code, a PS/2 mouse, serial cable, power supply and a choice of VGA or flat-panel video cables. The SBC-Geode-GXm Development Kit is available now for $795, or $1,345 with a 6.5-inch color LCD panel. ▮

JUNGO SET TO RELEASE WINDRIVER 5.0

Driver kit brings GUI to Linux, Solaris; supports remote targets

BY EDWARD J. CORREIA

Development tools company Jungo Ltd. this month was scheduled to release WinDriver 5.0 and KernelDriver 5.0, the latest versions of its cross-platform hardware driver development kits, which it says will add a graphical user interface for Linux and Solaris hosts, as well as deliver LAN/WAN driver development and delivery capabilities to remote embedded hardware targets.

Jungo's tools provide C/C++ developers with an environment for automatically generating hardware driver code for target devices running Linux, OS/2, Solaris, VxWorks and Windows, including Windows CE with USB. According to claims, drivers for all supported target platforms can be created from the same code base.

Central to WinDriver is DriverWizard, a utility that the company says can detect and debug hardware and generate drivers without the need for a vendor-supplied device development kit (DDK). Previously available only for Windows hosts, version 5.0 will supply a GUI for Linux and Solaris. DriverWizard supports PCI, ISA, USB and EISA bus technologies, as well as memory-mapped cards, I/O operations, hardware interrupts and DMA transfers.

Version 5.0 also introduces Remote WinDriver, which enables developers to detect, diagnose and develop driver source code for target hardware over LAN, WAN or dial-up connections as if targets were connected locally. According to the company, the same capabilities also apply to devices connected to the target, including USB. Target hardware requires that an operating system and TCP/IP stack be running along with a WinDriver kernel and remote access utility, both included with the new kit, and can be deployed to an unlimited number of remote targets.

The CLI for Linux and Solaris will be replaced with a GUI.

WinDriver/KernelDriver 5.0 tools were scheduled for release April 12. Pricing, which includes four months of unlimited technical support and product updates, starts at $1,499 for the Windows version, $1,999 for Linux, and $3,999 for Solaris for Intel or SPARC processors. Drivers may be distributed in unlimited quantities without royalties. However, development on additional platforms requires the purchase of the appropriate license. The company also offers a free 30-day evaluation version at www.jungo.com/dnload.html. ▮

Kada Launches Flagship JVM for Palm OS

BY EDWARD J. CORREIA

Some might think it strange that a company would rename itself before having released its first commercial product. But that's the case with Kada Systems Inc., which last week released its Kada Mobile Platform for Palm OS, a set of tools for building and optimizing Java applications for Palm, the company's first commercial offering.

Last fall, while still known as emWerks Inc., Kada was demonstrating an early version of its tools, which feature at their core a clean-room JVM that it claims is faster and more functional than competitive VMs, in roughly the same memory footprint.

According to Jim Acquaviva, Kada's CEO, the difference is that Kada has based its JVM on Sun's full Connected Device Configuration (CDC) specification, while the Sun and IBM VMs for Palm are built from the more-limited CLDC specification. Shekar Mantha, Kada's founder and CTO, said this gives developers a tremendous advantage. "We support any Java IDE out there. You don't have to worry that the IDE supports the CLDC classes or not. We know that all IDEs support the JDK classes," he said.

Once an application is developed, Mantha continued, its footprint can be fine-tuned using the Kada Minimizer, which analyzes application code and determines which classes and methods are needed and optionally eliminates the excess Kada APIs.

To enhance Java performance, the platform provides a choice of using an ahead-of-time compiler, in which selected methods are precompiled and stored as native code on the device; and an adaptive just-in-time (JIT) compiler, which automatically compiles the most frequently invoked methods.

Mantha said that Kada (www.kadasystems.com) also distinguishes itself from competitors with its support for the Java Native Interface (JNI), which allows Java code to "interface with C implementations of SQL databases," and other native code. The Kada JVM is available in a compact version, which occupies 155KB and supports networking and AWT but not database functions, and a full-function version at 384KB that adds SQL and JDBC capabilities and includes a JIT compiler. The Kada APIs require 460KB compressed and include all personal profiles except Security, RMI and Beans.

Regarding Sun compliance, Shekar said the Kada implementations have passed the Mauve test suite, an open-source project designed for testing clean-room Java implementations by companies that do not have access to the Sun suite. It does not compromise their clean-room status.

The Kada Mobile Platform is available now in three versions. For $295, developers receive the introductory development kit with testing and optimization tools and Web-based support. For $895, developers also receive a basic support subscription with one year of updates, telephone support, technical bulletins and 10 deployment licenses for testing or commercial deployment. A $3,995 professional subscription adds a dedicated account manager, toll-free high-level technical support, plus 100 deployment licenses. ▮

NexTest Completes Suite for Component Reuse

BY EDWARD J. CORREIA

NexWave Solutions has announced the release of NexTest, a key component for helping engineers piece together an embedded operating system and applications from a selection of reusable generic parts.

NexTest works in conjunction with NexWave's NexCore, a component-based development framework that the company says is suitable for building intelligent stand-alone Internet appliances, including set-top boxes, handheld computers, telecommunications and networking equipment and all manner of industrial control systems.

According to Daniel Ackerman, NexWave's COO, the problem that NexWave is solving is one of system consistency by standardization. "Ninety percent of microprocessors today go into products with embedded systems, but in over half these products, the operating systems are nonstandard, proprietary and version-specific—in short, a nightmare to support," he said. In order to develop efficiently with reusable components, he continued, "you must be able to develop the operating system and related applications and leverage existing and related technology."

The NexTest tool, according to the company (www.nexwave-solutions.com), performs component-level testing by remotely scanning the components during runtime, and forces them to make arbitrary function calls, similar to the way a command interpreter would, but with results that are far more visible to the tester. The tool allows for nonregression test setup and interactive debugging tests. It includes the ability to dynamically load components during the test.

NexTest also can be configured to execute Perl or Python test scripts. According to the company, the NexCore architecture permits system software components to be interchanged or replaced without taking the system down and without significantly impacting system performance.

NexTest is available now as part of the complete NexCore suite, which includes the NexCore framework, an application builder, GNU compiler and debugger for $4,000 per seat. ▮

VISUALITY

◂ continued from page 1

fore not see or be seen by other NQ devices. "That would require running the CIFS server and client, both," said Lerner, adding that the necessary client software for communicating device-to-device is under development and expected to be ready in three to four months.

Network Quick (www.visualitynq.com) is supplied as a library for Linux and VxWorks Tornado environments and as a set of executables for Windows CE. The Windows CE version can be built into the system image with the Microsoft Platform Builder or loaded onto a running system and executed from the start-up group. Available now, the binary version sells for $5,000. Full source code is available for $15,000 to $20,000. Runtime fees depend on volume. ▮

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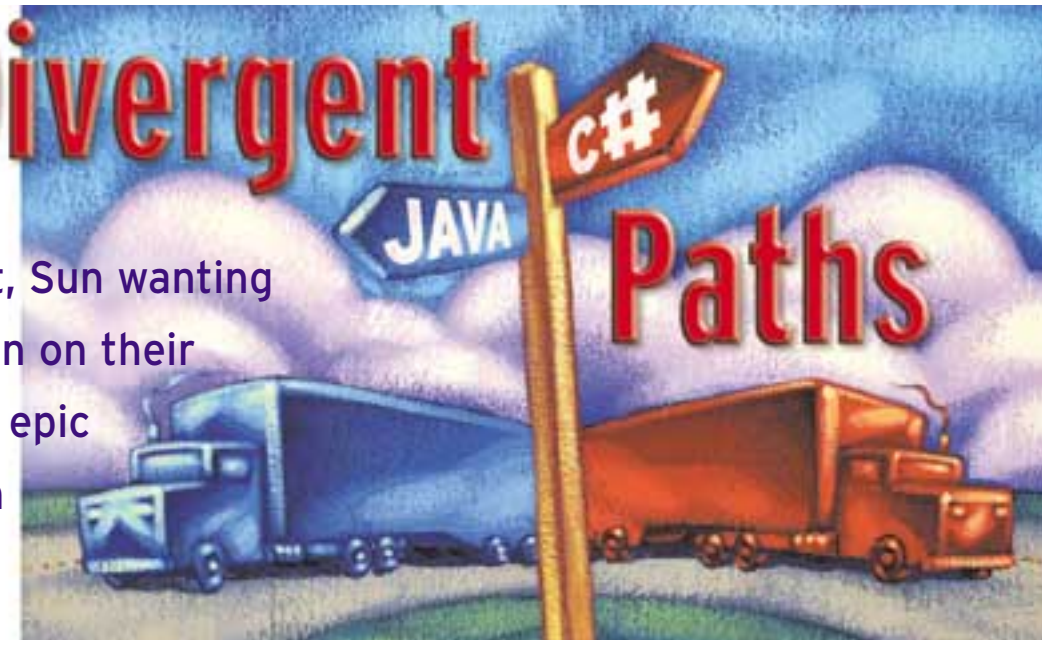
On Divergent Paths



With Microsoft, Sun wanting standardization on their platforms, the epic battle rages on

BY DAVID RUBINSTEIN

C# versus Java. It's the latest episode in a decade-old soap opera. You've doubtlessly been following this latest blow-by-blow struggle in newspaper stories, heard the corporate spin at Microsoft Corp. and Sun Microsystems Inc. user conferences, or read about it on chat boards or newsgroups. Perhaps you've been intrigued enough to peruse the reference books or even take the platforms out for a test drive. There are some technical similarities, many more differences and a hope in the industry for bridges across the divide that will allow compatibility and interoperability.

But it is seen as so much more. In the words of Hewlett-Packard Co. spokesperson Shirley Quastler, it is nothing less than "a complete battle for the marketplace, and Microsoft has billions to throw at it. It all goes back to the fight over Java, and it's continuing."

Certainly, each side has strong partners. Some shrewd partners support both sides. But who would have thought it would be Microsoft grabbing the high ground by proclaiming itself as the true standards-based platform by submitting C# to ECMA, while denouncing others (that is, Sun) as too proprietary?

Sun, the purveyor of the "other" platform, had a chance to attain the mountaintop first, but chose to withdraw Java from consideration by an independent standards body. While Java has become a virtual standard, especially since Sun's partners gained a modicum of input and authority through the Java Community Process, Microsoft is claiming its submissions of the C# language and the Common Language Infrastructure (CLI) to ECMA make it a bona fide open platform. Many industry veterans, fearing they have fallen into some bizarre alternate universe, are greeting this proclamation cautiously, which Microsoft can't help but address.

"I can understand the skepticism," said Microsoft's Visual Studio.NET product manager, Ari Bixhorn. "This is a big change for us. But standards are core to the .NET strategy."

Microsoft's persistence in proclaiming that it's sincere has indeed won praise. "When their entire model has been building native compiled apps and now they're moving toward interpreted apps, that's a pretty radical shift," said Michael Swindell, Borland Software Corp.'s director of RAD tools product management. As for bringing C# to ECMA, Swindell said, "It's another check mark in the comparison box" between C# and Java.

"This is certainly not business as usual for Microsoft," said Mike Rank, marketing manager for HP's Web services software eSpeak. "They're playing in a more collegial manner within the industry."

WEB OF THE FUTURE

Microsoft has seen the future, and it is Web services. Although many definitions of the term have arisen, it is most widely thought to mean components and applications that can be accessed programmatically using XML and SOAP. Critics claim Microsoft came to this realization about four years later than the rest of the industry. But Bixhorn said, "By waiting to get into Web services, we were able to see which emerging standards were gaining acceptance."

It is this acceptance of standards, though, that leads many to believe the Internet will ultimately become the platform upon which applications will be written and deployed, rendering the us-versus-them arguments moot.

"Why build to Solaris, OS/400 or Windows if you can build to the Internet?" asked IBM Corp.'s director of e-marketing, Scott Hebner. The overriding trends toward standardization and integration, and away from vendor lock, according to Hebner, are driving a movement toward building applications to an open platform of technology. "The momentum of the Internet will continue to accelerate and will provide all the freedom of integration. Those standards will dictate who's successful in providing middleware and tools."

"A few years from now, it won't matter a whole lot. The notion of where an application lives already is changing," said Borland's Swindell. "The idea of where an app lives won't be important because apps will be made up of pieces living all over the world."

SOAP=OPEN, C#=CLOSED

Take the Simple Object Access Protocol. Microsoft has been a leading force behind promoting acceptance of SOAP for invoking component calls over the Internet, and has embraced XML as the data-exchange protocol for use with SOAP. Similarly, Sun and its partners have built XML APIs into the Java 2 platform and also embrace SOAP, Web Services Description Language and Universal Description, Discovery and Integration. But that doesn't mean that Sun is accepting the C# language as part of the deal. "I don't see the support in the industry to make C# a standard when you have Java," Hebner said. "All the major middleware platforms, except Microsoft, are Java."

Microsoft is taking an unusual approach to having C# and CLI become standards. Where in the past, new technologies have been examined, test-driven and widely adopted by multiple vendors before being submitted to a standards body, Microsoft has submitted a specification it has developed alone. Nobody else in the industry has had input into C#. And, if accepted, it would become a standard that must be used with the proprietary .NET Framework.

"C# is not agnostic," said Dean Guida, CEO of component maker Infragistics Inc. "Java is supported on more devices and operating systems [than .NET], and has more participation in creating platform services and messaging systems. Also, the competitive best-of-breed approach moves it forward."

There is a question as to the need for a new programming language and deployment platform that so closely mirrors Java. "What is the market need for C#?" IBM's Hebner asked. "I know Microsoft's need—to extend their platform and create a way to have Windows-only applications built for the Internet. It really is an effort to create an alternative to Java," Hebner said, adding that he sees no compelling reason for an alternative.

HP's Rank said C# fills a need for those developers loyal to the Microsoft architecture. "C# addresses a large community used to working in a certain way," he said.

PLAYING NICE TOGETHER

Interestingly, most people interviewed predicted that Java developers will see no compelling reason to adopt C# and .NET, and further, that Microsoft developers will not have to abandon what they already know. The fact that there continues to be two distinct roads in the IT world—the Microsoft world and the Java world—is only an issue as far as interoperability, and the concern is that cooperation between the two sides might be slow to develop. "If

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C# and Java: Flat-head and Phillips

BY LARRY O'BRIEN

Microsoft Corp.'s C# is a nice language with several incremental improvements over its closest sibling, Java. "Incremental" is the key word, as there is nothing in the C# language to make a Java programmer particularly envious or vice versa. Programmers wishing to gain a competitive edge from innovative computer language design will have to look elsewhere. C# and Java are like flat-head and Phillips screwdrivers—incompatible tools for essentially the same job.

The C# specification was written by Microsoft's Anders Hejlsberg and Scott Wiltamuth. Hejlsberg is the respected author of the breakthrough Turbo Pascal compiler and was the chief designer of Borland's Delphi, a Pascal derivative. Although Microsoft insists that C# should be categorized as one of many in a family of languages derived from the C programming language, this is extremely disingenuous—C# is closer to both Java and Delphi than to C. It makes sense that Microsoft developed a "clean room" Java-like language: Microsoft's legal troubles with Sun Microsystems Inc. are well known, and Java clearly serves a sweet spot in the development community between the scalpel-sharp but time-consuming languages of C and C++ and high-productivity but slower-running and less-flexible languages such as Visual Basic or Perl. Those wishing to work solely in Microsoft languages now have a nice spectrum of tools ranging from ASP through Visual Basic through C# to Visual C++. C# is easy to program. A com-

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Meet the Java Developer's Boss

A few years ago he thought Java was just another language craze, the next phase in the battle between Microsoft and Sun. But last year he seeded a few development teams with Java 1.1. Not only did the developers find the C++-like language easier to work with, but the apps proved to be stable and portable once JVM compatibility issues were worked out. Besides, the CIO has made it imperative that all of the company's legacy apps be Web-enabled and that means across different platforms too. Maybe Java is more than just the latest Silicon Valley buzzword.

He's been studying Sun's new J2EE release with some excitement. Now he's ready to let one of his development teams use J2EE and Enterprise JavaBeans to create a CRM system — deployed across the Web, of course. One of his biggest challenges won't be technical: corralling the Java programmers, who until now have had complete freedom to choose their own favorite tools and libraries, into adopting company standards. Not only do standards mean better consistency during the development process, but also volume discounts, better tech support, and more effective training. That's why he now insists on signing off personally on any new Java purchases.

The Java journals? No thanks. The last thing he needs is programming tips, hunks of code, and blind, self-serving enthusiasm. He needs a wide-angle view of the entire spectrum of application and software development tools and he needs a rational, balanced outlook on future Java developments and how they fit into the enterprise. He needs to know the trends, the products, the alliances, the NEWS, and what it all means. That's why he reads *SD Times*.

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C# AND JAVA

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mand-line compiler is available in the .NET Framework CD that Microsoft has been bundling with many programming magazines (although it installs the CSC.EXE compiler into a subdirectory of Windows and provides no links or documentation for use on the CD), the failed-compile diagnostics are clear and accurately point to the offending line, and runtime exceptions are handled gracefully with clear stack traces pointing to the source of the error. While the Framework CD doesn't contain documentation on the runtime library, there are documents on http://msdn.microsoft.com that can serve as a solid starting point. It is easy, for instance, to write the routines needed for reading and writing binary data to and from files using a buffered stream—C# uses the Decorator pattern for this, as does Java. The few snags hit while programming in C# generally involve capitalization: C# uses an initial capital on method names; Java doesn't. C# uses a lowercase letter to denote strings; Java doesn't. Some of the nice incremental features that C# includes are a "foreach" command for iteration, enumerated types and more complete access modifiers. More significant features include Properties (which automatically provide overloaded assignment and access operators on instance variables), Delegates (type-safe, polymorphic method pointers) and Versioning (which is hoped to be the path away from "DLL Hell"). An intriguing feature of C# is free access to pointers in methods explicitly tagged as "unsafe," which means mixed-language programming between C# and C/C++ will likely be easier than using the Java Native Interface.

Learning times for the language itself will be very similar to learning times for Java—a matter of days or weeks for a C/C++ programmer, a little longer for Visual Basic programmers. For those with Java or Delphi experience, it will be a matter of playing around for a day or two; those with Java *and* Delphi should be able to pick it up on-the-fly. Learning may be hampered, at least initially, by the lack of diverse training materials. (O'Reilly has recently published "C# Essentials," by Ben Albahari, Peter Drayton and Brad Merrill, which serves more as a language reference than as a tutorial.) Learning the CRL and .NET Framework as they become publicly available will, of course, be much more time-consuming than learning the C# language itself. For those who learn computer languages in order to arm themselves with diverse techniques for different problems, C# offers little that can't be found in Java or Delphi. However, if Microsoft technologies are important to your shop, C# will be *the* major language for implementing .NET services. ▮

Larry O'Brien is a regular columnist for SD Times.

DIVERGENT PATHS

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Microsoft won't bring .NET to other platforms, it won't hurt them," Swindell said. "As long as interoperability works and Web services work, it benefits the developer community."

That interoperability will be provided by such bridge technologies as XML and the other Web services standards. For developers, though, combining .NET's multiple language capability with Java's cross-platform functionality would create a new Holy Grail—write in any language, run on any platform. But only if there's a Common Language Runtime able to accommodate it.

"If someone creates a CLR for another machine, .NET instantly ports entirely," said Sam Patterson, CEO of ComponentSource. "I'm crossing my fingers and hoping it happens. You could then write [applications] in any language and run on any platform."

Rank said his company is trying to build the bridge between the two worlds at the Web services level. "I think," he said, "the world will have room for both." ▮

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HAILSTORM

◂ continued from page 1

tion services. The goal, according to the company, is to help development teams to reduce their software-development and operational costs.

During its March 21 announcement, Microsoft chose not to provide specific details about HailStorm's delivery dates and prices, although it admitted that these services would direct revenue toward Microsoft for the use of its Passport service.

In fact, most of the announcement was taken up by prototype demonstrations by Microsoft partners American Express Co., Click Commerce Inc., eBay Inc., Expedia Inc. and Groove Networks Inc. that showed how their applications can exploit interlocking Web services communicating over heterogeneous platforms using XML and SOAP.

HailStorm is not tied to Windows, insists Microsoft's Gates.

The benefit of HailStorm, claimed Microsoft chairman Bill Gates, is that Web services-based applications can seamlessly interoperate over the Internet.

The HailStorm model, which employs Passport as a single user-authentication method, is designed to make the Web services portable and independent of a single client device, and to allow e-commerce transactions and secure services to take place over the Internet by using Passport as a central data store for personal and payment information.

Microsoft's revenue model would presumably consist of transactional charges for use of the Passport service, or a subscription fee paid by either Web merchants or consumers for this service.

According to Microsoft, HailStorm applications could examine an individual's calendar, contact database or centrally stored documents from any application, device or service connected to the Internet.

HailStorm and Passport will be tightly integrated into Windows XP, the follow-on operating system to both Windows Me and Windows 2000. "What's the relationship of Windows XP to HailStorm? Well, Windows XP is a HailStorm endpoint. We are going to make it very easy when you use this new version of Windows to get to your HailStorm information," said Gates.

Although Web services are designed to be hosted on Windows XP, and currently require the use of the .NET Framework and Visual Studio, Microsoft promises to interoperate with other clients and servers.

"We want to be very clear that HailStorm is not exclusively tied to any particular operating system—not even Windows, if you include all the different versions that are out there," Gates said. "We make it particularly easy in Windows XP to get to HailStorm, but that can be done in any platform that's out there."

Those platforms include non-Microsoft operating systems, emphasized Bob Muglia, Microsoft's group vice president for .NET services. "Windows 2000 is supported, and we'll do some great things to make it easier for developers to build solutions that work with HailStorm, but if a developer is using Linux or if they're using Solaris as their back-end services, they can participate in HailStorm as well."

Still, there's no commitment that Microsoft will provide tools for developing .NET or HailStorm apps for non-Microsoft platform systems. ■

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EDITORIALS

Portal Mania 2.0

Combine an application server with a host-integration suite, and what do you get? A portal, which now means a platform suitable for creating Internet access to enterprise applications.

This is a different meaning of "portal" than the now-discredited e-commerce model, in which a turbo-charged Web site (AOL, Go, Netscape, Yahoo) provided consumers with one-stop access to news, stock quotes, entertainment, shopping and free e-mail, all paid for with commerce transaction fees and animated banner ads.

Nowadays when one hears about a company's portal strategy, the new meaning is more likely to be reminiscent of EAI than Excite: using an application server to enable enterprise application integration, using a central resource to link many disparate stovepipe systems.

Three factors differentiate today's portals. First, they are based on the XML specification. Many modern applications already speak XML, and it's usually not hard to wrap XML around older systems or applications using APIs or terminal emulation. Second, they combine the passive HTTP/HTML language with a more active publish/subscribe paradigm. Third, they are highly programmable and extensible.

The move toward portals is a natural evolution of the Internet (or of IP-based networks in general). HTML provides end users with information on demand. XML offers access to well-defined data. Web services enable the remote execution of application components. Enterprise portals take this concept to the next level.

An Immature Technology

Although companies like Microsoft and BEA Systems are moving full throttle onto the Web services racetrack, bear in mind that the technology is just in its earliest stages. Many details of the technologies and business models behind Web services must be worked out before you deploy them for more than pilot projects.

Take high availability, for example. What happens when your application relies upon a Web service that's not there? Perhaps the vendor went out of business. Maybe a server crashed, or a backhoe went through a fiber-optic cable. The reason is inconsequential: Your application will crash or will throw an exception. Either way, you're in trouble.

Take version control and dependencies. A Web service represents the ultimate in black-box testing, and also black-box version control. Just because the Web service behaves in one way today is no guarantee that the service will behave the same way tomorrow. You think DLL Hell is a problem? Imagine the possibilities if different applications or libraries require different versions of the same Web service. And because Web services can rely upon other Web services, you may not even know all of your applications' dependencies.

Take business models. The Web service that you like so much used be free…but suddenly you're told it will cost $1 per transaction. Or $10. What can you do about it, short of rewriting your application to use another service? It could get ugly.

That's not to say that Web services are a bad idea. Far from it. But until many of these fundamental issues are resolved, they should be considered an experimental technology. ▮

AND ANOTHER THING...

WHERE LINUX WENT WRONG

Searching for a new holiday punch concoction a few months ago at www.barnonedrinks.com, I found myself serenaded by a large rotating banner from VA Linux Systems Inc. While copying down the recipe for Poinsettia Punch (highly recommended), I was told I could "get a free GNU Image Manipulation Program." Later, another cheery banner flashed an offer for "Free Stuff for Open Source Developers."

Is this what Linux has come to? Poor Linux. The drive to commercialize and profit from Linux is killing it, or at least stemming its advance. But don't blame Linus; blame the vendors.

TED BAHR

As everyone knows, it's very hard to construct a business model based on selling free software. Compounding the problem is that when Linux vendors added proprietary bells and whistles to their open-source product, they had to give those improvements away to the community—including their competitors. What's a Linux vendor to do? "Charge for support!" they cried, and off the Linux vendors went to hire every open-source hermit they could find. "Come into the light," they said. "Come hack out here with us, and we'll give you lots of stock options."

Thus the Linux companies went wild "establishing credentials" as the coolest, hippest and techie-ist Linux vendor to work with. But there is a rather large contradiction between selling a product that's supposed to be inherently superior, better documented and more stable, and then embarking on the road to riches by selling "support."

In addition to the paradox of selling free software, Linux vendors have been largely unable to resolve the issue of the homage they feel they must pay to the hacker movement versus the need to put on suits and sell their wares to enterprise IT departments. Thus many vendors to this day pursue conflicting "personal" and "enterprise" strategies, neither of which is executed outside of the narrow Linux enthusiast audience.

The kiss of death came when Linux was swept up in the dot-com craze. As the rising tide lifted all boats, leaky or otherwise, the challenges to a workable business model could be completely ignored. In its heyday, Red Hat Inc.'s market capitalization was $8 billion. VA Linux went public and the stock rose 699 percent in the first day. The other Linux vendors stomped on the growth accelerator, living in the new Bizzaro-world of huge staffs and increasing losses. If they could only go IPO before the gate closed…too late! Instead of glory, the Linux vendors have been hammered.

If the Linux companies had only stayed as small development shops, they would have had nice profitable little businesses. But now, big and bloated, without a viable long-term business model, they're just watching to see who will be voted off the island next.

Most Linux vendors have hung on so far, but without proprietary intellectual property or real hope for penetrating the support market, the Linux companies are scattering.

Red Hat diversified into the embedded market early with the acquisition of Cygnus. They just released their year-end numbers, and their revenue was $84 million. Not bad, but still running at a $6 million loss. With Red Hat's market cap at more than $800 million, they should be able to buy other companies and leverage an established reputation as the market leader to survive.

TurboLinux Inc. has always been successful in Asia and is trying to move into the high-end clustering market. The company is groaning under their acquisition of Linuxcare, a support organization that was already bleeding heavily. TurboLinux just cancelled its IPO.

SuSE Linux AG is very successful in Germany and will likely remain so because their distribution runs on more platforms than anyone else's. Its U.S. subsidiary is torn between targeting the masses and serving enterprise-level IT managers. Unless SuSE chooses a single road, long-term prospects in the U.S. are grim.

Caldera Systems Inc.'s first quarter ending Feb. 28 showed $1.1 million—that's million, with an "m"—of revenue, 10 percent below revenues for the previous quarter. As my 3-year-old-son Petey says, "Oops." Caldera is now touting itself as a "Linux for Business" leader. Where do they market their wares? In Linux enthusiast magazines, of course. Caldera has slim chances—look for a merger while their stock price is still above a dollar.

VA Linux has a different model: selling enterprises hardware running the Linux flavor of the enterprise's choice. The problem can be summed up in three words: Compaq. Dell. IBM. Certainly advertising on barnonedrinks.com is a great way to sell Linux hardware. *Not!* VA Linux's market cap is down to $180 million, and it's racked by losses and shareholder lawsuits.

Say your business case favors Linux. Who will you choose as your preferred partner: a dedicated Linux vendor whose future may be in doubt, or an established cross-platform player that can help you design, build, deploy and manage your Linux applications within the context of a heterogeneous world? Who is going to look after your business better: experienced IT companies with worldwide support organizations, or a bunch of well-meaning hackers with underwater stock options?

Perhaps Linux was never fated to become a commercial success. The Linux mania of 1998 to 2000 may be seen as a blip, as a temporary aberration in a movement that wasn't meant to make anyone rich.

The destruction of the commercial possibilities with Linux will actually be very good for the operating system. There will be more genuine community feeling, more attention paid to the principles of the open-source movement and less posturing by heavyweight vendors worried about appeasing their frustrated investors. What's interesting about Linux is that anyone thought there needed to be a business model when Linux's aspirations were always about freedom and technology.

At the very least, it wasn't about advertising on Web sites that focus on funny fruit drinks with little umbrellas in them. ▮

Ted Bahr is publisher of SD Times.

WORKSTATE, NOT WORKFLOW

BOOK WATCH

ALAN ZEICHICK

What should be the goal of a software development department? To develop processes designed to help them climb the CMM ladder? Or to build software that suits the customers' needs? In a perfect world, perhaps, the answer would be "both," but in the real world, you can have one or the other. You can spend hours writing down policies so that your developers will strictly adhere to a certain set of methodologies, best practices, frameworks and procedures—in other words, you can mandate a process. Or, says James A. Highsmith III, you can find out what your customers need, set step-by-step goals that will propel you closer to meeting those needs, and then create a collaborative environment that will allow you to proceed one step at a time while constantly re-evaluating the work that still lies ahead.

I really enjoyed "Adaptive Software Development," which I found unusually thought-provoking. Highsmith's stories about mountain climbing, and the way in which he drew analogies between that sport—which has both individual and group aspects—and software development are clever and help to frame his discussion. However, it would be a mistake to look at this book as a silver bullet. There's no "Aha!" aspect; you're not going to rush out and re-engineer your core processes. But Highsmith offers many good ideas.

For example, without referring to Extreme Programming by name, he pointed out many of the flaws in such a RAD-to-the-max development methodology, which relies upon instant gratification, rather than solid design, as its foundation. Yet he also recognizes the importance of RAD; in fact, Highsmith's solution to the industry's woes, which he calls Adaptive Development, is a refinement of his own RAD model.

The key to Highsmith's model is the word "adaptive" itself. By that, he means that developers should assume that their customers' needs will constantly be changing. Management needs to define a mission for a project, determine the features and dates, and break the project into a series of individual steps, or cycles, each between four and eight weeks. Early steps might verify the project's scope; later ones will design an architecture, build the code, perform final testing and then deploy.

A key point is that the steps aren't defined by *workflow*, or by who does what tasks. Rather, the key indicator of success is the state the project is in at the conclusion of each step: That's the *workstate*, says Highsmith. By focusing on tangible results, rather than processes, the project is guaranteed to move forward. Once the plan is in place, managers bring their teams together to complete each step, one at a time.

Those steps, however, aren't monolithic, and aren't necessarily designed to produce perfect results. Adaptation is significantly more important than optimization, he says. Assuming that the project is going to be rebuilt or modified, don't waste your time building a perfect solution in 18 months—that's too late, too huge and too inflexible to satisfy the customer. Instead, design your steps to create a good-enough solution in three months, with a procedure in place to change that solution as required. Then, your customers are satisfied, and you have an adaptable framework from which to build.

How to do it? Collaboration. Key individuals involved in a project need to constantly engage in joint application development sessions, formal and informal customer reviews, prototyping—the usual. More important, managers need to realize that the best work is done by what Highsmith calls "Great Groups"—teams of people who are in the groove. Fostering a technological and social environment in which people feel empowered and want to put in the extra effort to become a Great Team is key to meeting milestones, controlling costs and reducing defects—and quickly adapting to changing conditions.

Sound simple? It's not, according to Highsmith, who presents his own techniques for implementing what he calls the "adaptive development lifecycle" of speculation, collaboration and learning. After he lays out the basics of his model, most of the book is spent exploring the different aspects of that model, presenting suggested best practices for encouraging Great Groups collaboration within a programming team and an entire organization, and ways of tuning his methodology to deal with real-world pressures.

He's no pie-in-the-sky idealist—in "Adaptive Software Development," Highsmith demonstrates that you don't have to adopt radical new development methodologies, or become a slave to specific process, in order to build and deliver the software that your customers want. Again, it's a good book: You won't decide to turn your organization upside down, but if you adopt even a few of his ideas, your team will be the better for it. ■

"Adaptive Software Development: A Collaborative Approach to Managing Complex Systems," James A. Highsmith III. Dorset House, 2000. Trade paper, 358 pages, $44.95.

Alan Zeichick is editor-in-chief of SD Times.

LETTERS TO THE EDITOR

RELIABILITY EQUALS LOWER COST

J.D. Hildebrand wrote that the purchase price of the operating system must be the smallest part of the overall cost of installing and operating an enterprise data system ("Does Open Source Still Matter," March 1, page 27). That's true, but the support costs for Linux are often assumed to be the same as for Windows. They're not. I charge about 30 percent to 50 percent more per hour than your typical Windows technician for doing essentially the same job with Linux, because my customers see me much less often than their Windows support people, box for box, and I come up empty-handed less often.

In one classic demo of system reliability, I support a small steel fabrication company with four Linux boxes and two Windows (to run AutoCAD on, since AutoDesk won't do a Linux version) on identical hardware. Of the last six support calls, five have been for Windows-only problems and one of those involved a complete reinstall. The only Linux work I have actually done for them since installation two years ago is to remotely update their secure shell and name servers, which is a few minutes' work.

Another factor often overlooked in support costs is that Microsoft and those trained by them tend to prefer one function per box. And in the case of domain controllers, you basically need two non-Internet-visible Windows boxes in addition to anything Internet-visible.

What this means is, in the typical case of a smallish business with 10 to 100 workstations and running a SQL database, the infrastructure can be one Linux box versus three Windows boxes at the low end, to two Linux boxes (in parallel, with failover) versus five Windows boxes (PDC, BDC, proxy/gateway/DNS, Web/FTP/CGI, SQL) and a router firewall at the high end.

Of course, more boxes mean more points of failure, and the high-end Linux system has dual data paths throughout so losing one box doesn't stop the show. The low-end Linux system will probably also use common off-the-shelf hardware rather than premium and more expensive gear.

Factors like this very rarely make it into TCO studies.

His main point—that lying face down, naked and nervous over a barrel is a bad idea—is indeed the nub of the matter. But many businesses don't see it this way until after they've been bitten, and some never do.

Leon Brooks

WHAT DO YOU THINK?

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MIDDLEWARE WATCH

ANDREW BINSTOCK

A wise man once commented that we overestimate changes in the short term, but underestimate them in the long term. One needs only to look at the events of the past two years to appreciate the importance of the first part of this contention. That we tend to underestimate the effects of long-term changes is equally true. For example, could the massive servers of the modern day—the ones needed to drive and support electronic commerce of all forms—be possible at all were it not for the precipitous drop in the cost of memory and of disk storage? Not at all.

In fact, most of today's software and operating systems would not be around at all if RAM and spinning media cost as much as they did even seven or eight years ago. The Internet would be quite minor in importance; the Web a colorful add-on used by a few firms as a shop window. RAM, disk space, bandwidth and processor power arguably have had more to do with the whole e-revolution than HTML, HTTP or any of the other technologies we associate with the birth of the Web.

The continuing decline of the price of RAM is hardly news. And so it is ignored, as are many slow, inexorable trends. Meanwhile they change the world in underestimated ways.

A major change that has been underreported because it is the simple continuation of a known trend is the distributed nature of today's enterprise architecture. In the late 1980s, the migration from centralized computing to client/server architectures began making news. The database server emerged as a new paradigm that was the counterweight to the fat clients; the application servers being the fulcrum. This change was important and compelling. It quietly felled the minicomputer industry.

Client/server became only marginally more complicated during the first half of the 1990s. Database servers were spread out across several machines and application servers sometimes were spread out across several CPUs as well, but by and large, the architecture moved forward only incrementally.

Programming changed in lock step with the architecture. Transactions whose life cycle previously had occurred entirely on the mainframe were now written with client and server portions—with the database segment written in SQL. Transaction paths from client to database server were fairly direct and understandable to developers, and in fact, the same developers often programmed the client and business rules portions as well as the SQL code needed for database access. This is an important point, as this time period is the last in which this end-to-end capability would be true.

The incursion of the Internet and then the Web into the business cycle changed everything. Business IT architecture changed quickly. First a firewall, then a Web server changed the nature of clients and application servers, respectively. Concurrently, the ERP craze occurred, changing our definition of back ends. Distributed computing had arrived and replaced client/server. Now all transactions were the product of the interaction of data among numerous dedicated stand-alone servers. During the passing years, the number of new types of servers grew rapidly. The Meta Group suggests that there are 18 types of servers in today's typical enterprise (when you add encryption servers, mail server, DNS servers, directory servers, EAI servers, load balancers and the like). To which we will soon add new entries such as XML servers.

With these changes, software development became significantly more complicated. So much so that it is now unrecognizable in its old form. In particular, the old formulation of a transaction originating with a client, processed by business logic and recorded in a database is completely outdated. Today, a client initiates a process that snakes its way through the enterprise from one specialty server to another until after numerous segments it finds its resting place in a database. The path is so complex now, no single developer knows exactly how it flows.

The guys working on the Web side know only that they have to deliver a request in a specific format to the application server. The guys working on the application server know that they have to do some processing before sending the transaction to the EAI server. The EAI server makes the data ready for ERP. And the ERP programmers know only their back-end world. When they communicate with the rest of the enterprise, they talk only to the EAI server. And so it goes. Teams of programmers in charge of individual segments process the data and hand it off in the correct format. This change has important—and by and large ignored—ramifications for all of enterprise software development. We will explore these in the next issue. ▮

Andrew Binstock is the principal analyst at Pacific Data Works LLC. Reach him at abinstock@pacificdataworks.com.

BETTER THAN MONEY

OPEN SOURCE

J.D. HILDEBRAND

Among the most durable misapprehensions postponing the dawn of the Open-Source Age must be the notion that when software is free, it means that programmers will not be paid. The fact is, today—in the age of for-profit, closed-source, proprietary code—most programmers' salaries already do not come from the sale of the software they write. In fact, they never did.

Most developers write software for use within their companies. The software is never sold, and their salaries have nothing to do with the retail value of the applications they write.

Other developers write software that is used only with a particular piece of hardware: firmware for hospital equipment, device drivers for peripherals, or applications that run inside microwave ovens. The software makes the device more valuable, but the developers' salaries are not calculated based on the retail value of the software.

Consultants get paid when they deliver software, but they are really paid for solving their clients' problems. They're paid by the hour or according to the "use value" of the software they provide—that is, the price the client is willing to pay to have the business problem solved.

Even in companies that produce software for retail sale, most developer time is devoted to planning, bug-fixing, documentation and maintenance tasks, not the generation of salable code.

If the world changed tomorrow and all closed-source proprietary software disappeared, professional developers would still be paid for producing in-house apps, creating embedded systems and device drivers, delivering solutions to clients, and performing planning, bug fixes, documentation and maintenance tasks.

Thus, the open-source revolution is no threat to developers' livelihoods.

But that's a story for another day. Today, I'd like to focus on a cultural curiosity of the open-source world: an alternate economy in which a quality of the spirit serves as currency.

THE ROOT OF ALL EVIL

I took an introductory economics course in college, but I spent most of the class time playing backgammon in the campus coffeehouse. So I will not trouble you with discussion of marginal decision rules, complex-arc elasticity fractions, multivariate *n*-dimensional cost models or post-Marxist theories of marginal revenue rates in quasimonopolistic milieus. The truth is, I doubt real economists understand all that hubba-bubba anyhow, despite their doctorates.

Simply: The business world as we know it is based upon an economic model called capitalism. In this system, the word "capital" is a synonym for "money." So instead of calling it "capitalism," we could call it "moneyism."

In our world, people's hard work and contributions to others' well-being are rewarded with money. People who accumulate a lot of money can convert it into increased power and freedom, and invest it in new ventures. That investment may make them richer or poorer.

When it functions properly, capitalism channels wealth to the people who contribute most to society; this additional capital lets them contribute even more. Individuals who contribute less receive less in return. Capitalism works so well that we are outraged when, through dishonesty or unfairly defended monopolies, money goes astray.

QUALITIES OF SPIRIT

The open-source world's economy is not based on money. Rather, those who contribute to projects accumulate high regard and good reputations. Open-source culture is not based on capitalism, but reputationism.

Consider Linux creator Linus Torvalds. In the closed-source world, Torvalds would be a tycoon, ready to move into a 66,000-square foot home paid for with royalties on his software. He would be a rich and powerful man.

But open-source economics does not reward its leaders with money, except coincidentally. Instead, Torvalds is rich in reputation capital.

Like any other rich man, Torvalds can spend what he has accumulated. He can donate it to worthy causes, speaking on their behalf and promoting them. He can invest it in a new project. If the project turns out well, he'll earn more reputation points. Otherwise, he'll have fewer.

Just as money gives the rich privileges in the capitalist world, Torvalds enjoys privileges in the reputationist open-source world. He gets to make decisions that influence others. He can overrule their ideas. He has the sort of freedom and control that any wealthy man has.

CODIFYING CHARACTER

Within the open-source community, many projects are under way to formalize and define reputation-based economics. Among the most interesting of these is the Advogato "trust metric," which is based upon a rigorously designed network flow model. This ongoing experiment in reputation economics is fascinating—check it out at www.advogato.org/trust-metric.html. Slashdot, SourceForge and other open-source meeting places have similar experiments in progress.

Money, they say, is the root of all evil. In its efforts to forge an alternate basis for rewarding good works, the open-source community may therefore be on the right side. ▮

J.D. Hildebrand is the former editor of such publications as Computer Language, Unix Review and Windows Tech Journal. Reach him at jdh@sdtimes.com.

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PEER-TO-POWER

At DCI's recent "Peer-to-Peer Summit" in San Francisco, no one was talking about the noose tightening around Napster, Gnutella's explosive growth and scaling problems, or the challenge of intellectual property protection in a world of massively interconnected, largely anonymous users.

Instead, the central theme of the business-oriented conference was "CPU brokering," a business model in which idle machines on the network are turned into opportunistic supercomputers. It makes sense—IBM's ASCI White supercomputer clocks in at 12 teraflops (12 trillion floating point operations per second) and retails for $110 million (although I suspect that if you buy a dozen, they'll throw in the 13th for free).

By comparison, Seti@home (http://setiathome.ssl.berkeley.edu), the poster child of the CPU brokering trend, typically runs at about 15 teraflops and has cost $500,000 to date (it was running at 22 teraflops during the writing of this article).

Seti@home, which analyzes data from the Arecibo Radio Telescope (www.naic.edu) in a so-far-vain attempt to detect evidence of extraterrestrial life, has accumulated more than 7.47x10^20 floating-point operations from almost 3 million volunteers using the C-based nerd-chic screensaver and would presumably be the single greatest calculation in the history of humanity.

Of course, Seti@home is both philanthropic and appealing to those among us who have a tendency toward high-capacity CPUs—who wouldn't want to take a chance at tapping into the Klingon air-traffic control system? But Peter Lee of DataSynapse Inc., a company that deploys peer-to-peer solutions across the Internet, says that the going rate for an idle processor is cheap: a couple of bucks per month in Flooz, a weekly Palm giveaway and a yearly crack at a Porsche. The CPU power that Lee brokers is used for considerably more prosaic goals than searching for ET.

WEB WATCH

LARRY O'BRIEN

DataSynapse specializes in financial risk analysis, lack of which can cause staggering losses at the volumes associated with today's global markets. An example Lee gives is a "value at risk analysis of a significant portfolio" which would involve 750,000,000 separate calculations, with market competition completely focused on driving down the decision time.

In a world where the increasing sentiment seems to be that desktop machines have become pretty darn close to fast enough, I wondered if the markets were going begging for this kind of distributed computing power. A representative of Parabon Computation had total conviction when he asserted: "Financial services, pharmaceutical and biotechnology have essentially limitless demands for processing power." Who's trying to build the most powerful supercomputer yet? Sandia National Laboratory for simulating nuclear detonations, Compaq and Celera, the company that is to gene sequencing what Ferrari was to grand prix racing.

I was convinced: I don't know much, but I know that money and medicine are markets that are here to stay. I liked Parabon's Frontier technology, too—a Java-based SDK provides for shorter development times and better client-side security and, in contrast to what's stated in the Seti@home FAQ, Java provides comparable performance to C in these kinds of CPU-bound, mathematically intense looping applications. Parabon donates some of its distributed network resources to "Compute Against Cancer," and while fighting colorectal cancer may not be as glamorous as looking for ET, it may be more practical. Another worthwhile effort is Fight AIDS at Home, powered by Entropia, which was also at the summit.

The bugaboo of distributed supercomputing is security; while it's reasonable to expect that no one would hoard a discovery from Seti@home (except for the Men in Black, who are probably running the whole "search" as a disinformation scheme anyway), paranoia is more realistic when it comes to financial analysis and the search for breakthrough medicines.

On the other hand, even if valuable information exists on the distributed network before it returns to its rightful "owner," one would think that the odds of its being recognized and exploited are effectively nil. Question: If such statistical certainty is not satisfactory, would zero-knowledge protocols be appropriate to this problem? (See Bruce Schneier's classic book "Applied Cryptography" or www.tml.hut.fi/Opinnot/Tik-110.501/1995/zeroknowledge.html for an overview.)

What would *your* business do with a teraflop or two of essentially free distributed computing power? A decade ago, when I was dizzy with the power of my brand-new 33MHz 80386, I predicted that constraint-based genetic computing was only a few iterations of Moore's Law away from becoming practical (John Koza's 1992 book on the subject will ignite your brain). Combined with Assertions and Exception, the sandbox security model and the simple opcodes of the Java Virtual Machine, perhaps the time has arrived. ▮

Larry O'Brien, the founding editor of Software Development Magazine, is a software engineering consultant based in San Francisco. Reach him at lobrien@email.com.

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INTELLIGENT DOMINATION

WINDOWS WATCH

OLIVER RIST

The new Microsoft isn't necessarily less ambitious, but it's certainly got a more intelligent plan for achieving its goals. Once the message was "Resistance is futile." The new message is "Cooperation with standards."

This doesn't mean Microsoft's Borgesque goals have changed any; it just means it's going about it in a new and smarter way. Frankly, it's a much brighter ideology than the old one: Instead of trapping customers into an ever-increasing spiral of proprietary software requirements, the New Microsoft is intent on adhering to new standards, implementing them first (and hopefully better than the competition) and thus have customers flock to them.

The latest example of this trend is Microsoft's announcement of cross-platform capabilities for .NET. As I scribble away here, the formal announcement hasn't yet happened, so I won't be able to comment on many specifics. But what we do know is that Microsoft intends to release tools to allow .NET applications to be run on Unix, including Linux.

One of the key tools in this upcoming announcement has been dubbed Hailstorm. That refers to a set of XML services that will handle chores such as user authentication and recording scheduling and calendar data. Not only will Hailstorm provide end-user functionality on its own, it also presents significant presence as an underlying data gathering mechanism for other services.

On Windows 2000, this is a cool tool. But being able to run it on Solaris or Linux as well would be truly sweet. Since Apache is still the world's leading Web server of choice, supporting Apache and other servers is a logical move on Microsoft's part if it intends to capture more Web developer mind share. And yet, it's still surprising coming from a company that has religiously stuck to a "Windows or nothing" philosophy for so many years.

The big question is just how many of .NET's juicier features Redmond will allow to trickle over onto the Unix set. In the past, whenever Microsoft has offered cross-platform products, it's maintained a distinct difference between native (Windows) functionality vs. that allowed on other platforms. This difference sometimes even extended into areas like reliability and compatibility. Making it significantly harder for Unix- and Linux-oriented Web developers to build applications on these platforms with .NET would be a serious blunder on Redmond's part long term.

Honestly, however, were this just a couple of years ago, that type of "limited support" is exactly the kind of move I would have expected from The Gatesians. The Balmerese, on the other hand, have managed to impress me enough in the past 10 months that I am actually optimistic about their cross-platform announcement. Microsoft has shown enough foresight and grit in the recent past to make me think it may actually do this one correctly right off the bat.

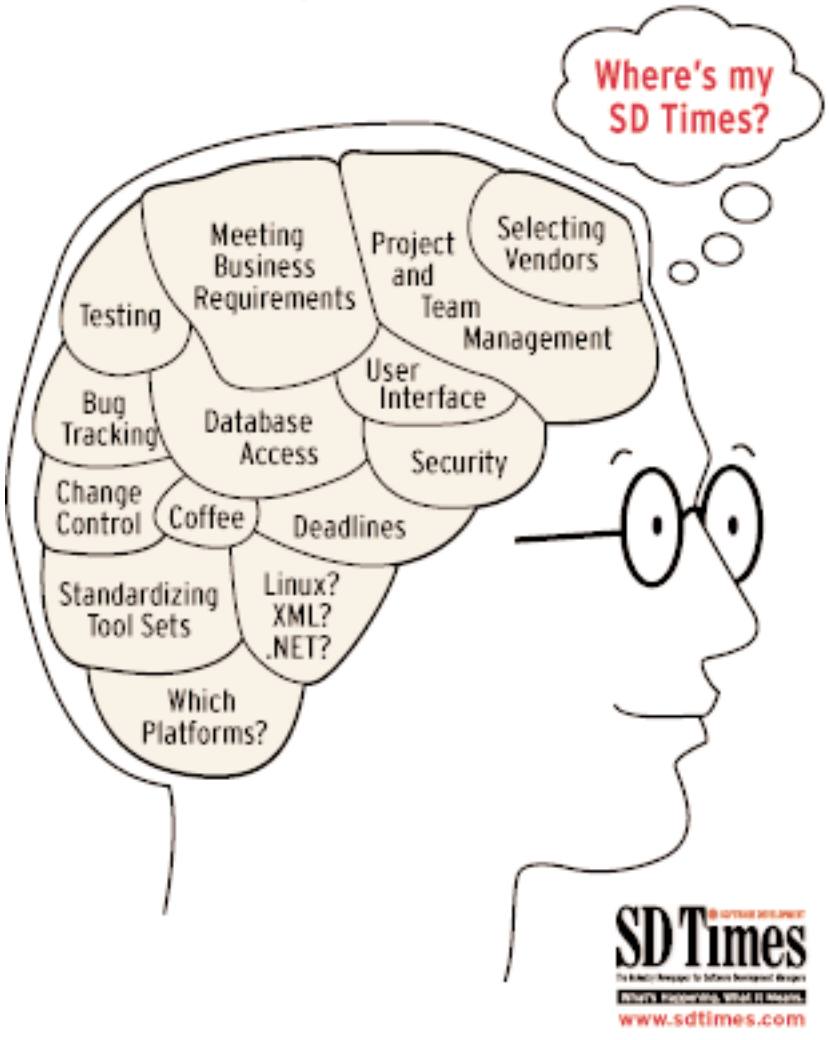
Indeed, Redmond has already taken a step in this direction with its recent announcement of added marketing thrust behind its Microsoft Passport technology. Passport is Redmond's avenue for allowing users dynamic access to personalized Web experiences by acting as probably the largest Web-based user identification service alive today. Not only has Redmond announced that Passport accounts will be assigned to every user of its upcoming XP operating system, it's also made sure that this technology plays well with .NET applications—apparently across multiple operating platforms and all based on open standards, especially XML.

My only concern here is that even in the wake of Microsoft's settlement with Sun, I still don't hear the word "Java" emanating very often from the Land of Rain and Starbucks. Only recently has Microsoft even acknowledged Java as being on its radar, and then the announcement seemed lukewarm.

Bottom line, Microsoft representatives declared that they would continue to support Java even within the .NET development platform, but hurried to say that it will not be Sun's idea of true Java. Where Sun is pushing J2EE as the place that Java developers want to be, Microsoft developers will need to be content with a special version of Java aimed specifically at .NET. No specifics yet on where the trade-offs will be, but I can't imagine it spells good news for anyone looking to do anything ambitious with Java on .NET.

Does all this really spell a change of strategy on how Microsoft will push its technology? I truly think so. While I can't render a verdict on cross-platform .NET just yet, what Microsoft has done with its support of open XML and SOAP in and out of BizTalk shows me that Redmond really has turned over a new leaf. It's not trying to own either of the two standards, just the engine it's selling to customers. And it's working beautifully. Keep it up. ▮

Oliver Rist is vice president of product development for rCASH in the REALM. Reach him at orist@mindspring.com.



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HEADING HOME AFTER THE FLING

Sometimes, you just can't help falling for hype. It's seductive and heady and insidious in the way it lures you in, until you are consumed by it. Once taken in, though, if you can see through it and steer your way clear, you'll be the stronger for the experience.

Such is life these days at Mortice Kern Systems, which is getting back to its software configuration management roots after a failed fling with Web content management—sort of an ugly Vignette of its brief time in that new space. The folks at MKS headquarters in Ontario hope that things will be better the second time around.

MONEY WATCH

DAVID RUBINSTEIN

MKS went into business some 15 years ago with the well-known MKS Toolkit, a set of Unix-to-PC interoperability tools. From there, the company moved into source-code management (SCM), where it enjoyed profitability and built a large customer base. Then came the fateful decision last summer to spin off Vertical Sky, its "rapid evolution management" solution, aimed at dot-coms, trying to help Web sites keep up with changes mandated by explosive growth.

"Our marketing and sales didn't get done right," said MKS chief executive Philip Deck, who came on board in January. "The transition from SCM to Web applications was confusing and the Vertical Sky brand was confusing." Investors certainly seemed confused, too, as they drove its stock price down from a 52-week high of $6.92 cents per share to about 90 cents before the announcement in late March.

Deck has undertaken a number of initiatives to get the company back on track. In February, he was able to secure a $12.5 million round of funding to shore up the company's capital base. He's leading the move to scrap the Vertical Sky brand—"At some point, we'll deploy that technology under the Mortice Kern name," Deck said—and was able to pull off the late March acquisition of Upspring Software Inc. for a total consideration of $3.4 million, which was an opportunity that MKS was able to take advantage of because it had the round of funding in place. Upspring, formerly Software Emancipation Technologies, had $5.5 million in revenues last year and clearly was foundering, unable in the current economic climate to raise additional funding needed to drive the company forward.

To Deck, though, the climate is perfect for growing software companies, if you have available capital. Small companies, he believes, are not as affected by market swings as large-cap companies are, and there are more developers and salespeople available during this downturn. And, he added, "it's certainly a better time to buy companies than to sell them."

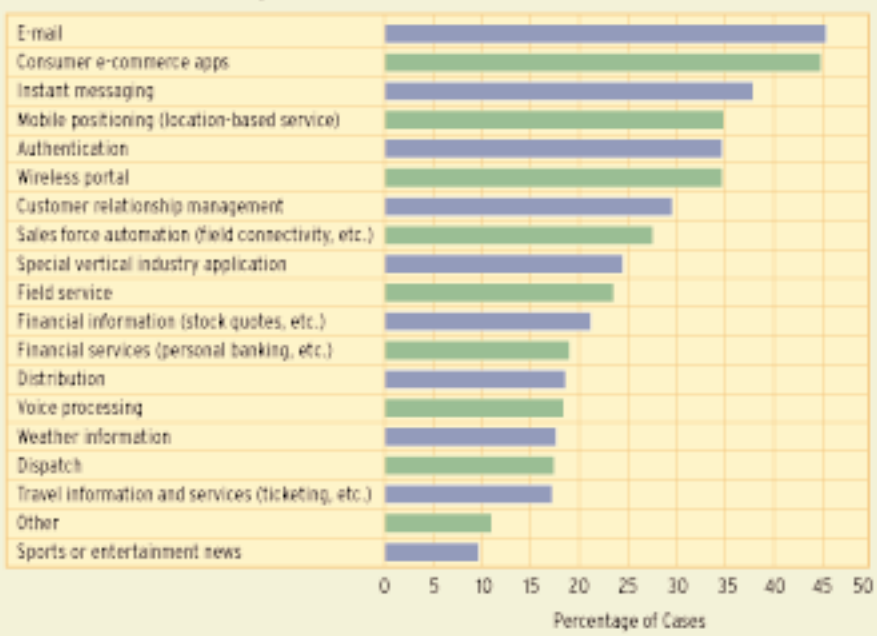
MKS' purchase of Upspring, which offers software-testing tools and services, isn't part of Deck's primary strategy of acquisitions, he cautioned. "What Upspring does is technical, so it's not easy to sell," he said. "Their customers are very enthusiastic about keeping it going. They were not growing in a cash-flow-positive way, and we understand their market space pretty well." Now, Mortice Kern will be able to add Upspring's impact analysis and code analysis functionality as it returns its focus to SCM.

SWEEPING THE STREET

There certainly is nothing prophetic about the news that came out of Oracle Corp. late last month. The company announced it will eliminate about 900 workers, or roughly 2 percent (a drop in the bucket) of the company's worldwide work force, due to slowing demand for Oracle products and services. The move follows similar actions taken by other industry-leading companies such as Intel Corp. and Cisco Systems Inc., which also have had to lay off employees as they see their earnings flatten and stock prices tumble. Oracle's stock has lost more than half its value in the past two months. … Red Hat Inc. reported late last month that it broke even in the fourth quarter of last year, beating street estimates of a loss of 1 cent per share, and expects to turn a profit by the first quarter of next year. Revenues climbed to $27 million for the quarter as compared with $13.1 million a year ago, but the company said first-quarter revenues would remain flat at $27 million. For the quarter, the company posted a loss of $600,000, and said next year's revenues are expected at $140 million, short of analyst estimates of $152.2 million. For that, the company was rewarded with a 20 percent increase in its stock price. … Corel Corp. expects to report a $500,000 profit for the first quarter ended Feb. 28, which would return the company to profitability two quarters earlier than anticipated. Revenues of $32.5 million, though, were lower than the company expected. It is hoping to recover that revenue when new versions of the company's products are released later this year, but the skittishness of the market makes sustained profitability little more than wishful thinking. ▮

David Rubinstein is executive editor of SD Times.

Which Types of Wireless Applications Will Be Developed This Year?



EVANS DATA WATCH

Applications for e-mail are the most common projects among wireless developers, with just more than 45 percent saying they will write an e-mail application this year, according to a recent Evans Data survey.

E-commerce applications were the next most common project, with slightly less than 45 percent saying they would be writing e-commerce apps this year. The respondents were allowed to choose more than one type of application project, so the percent of cases does not total 100. Instant messaging was third at a little better than 37 percent.

The least common type of application project for the year is sports or entertainment news, with less than 10 percent of developers indicating they will work on that type of project.

SOURCE: Evans Data Corp. Wireless Developers Survey, Vol. 1, 2001

www.evansdata.com

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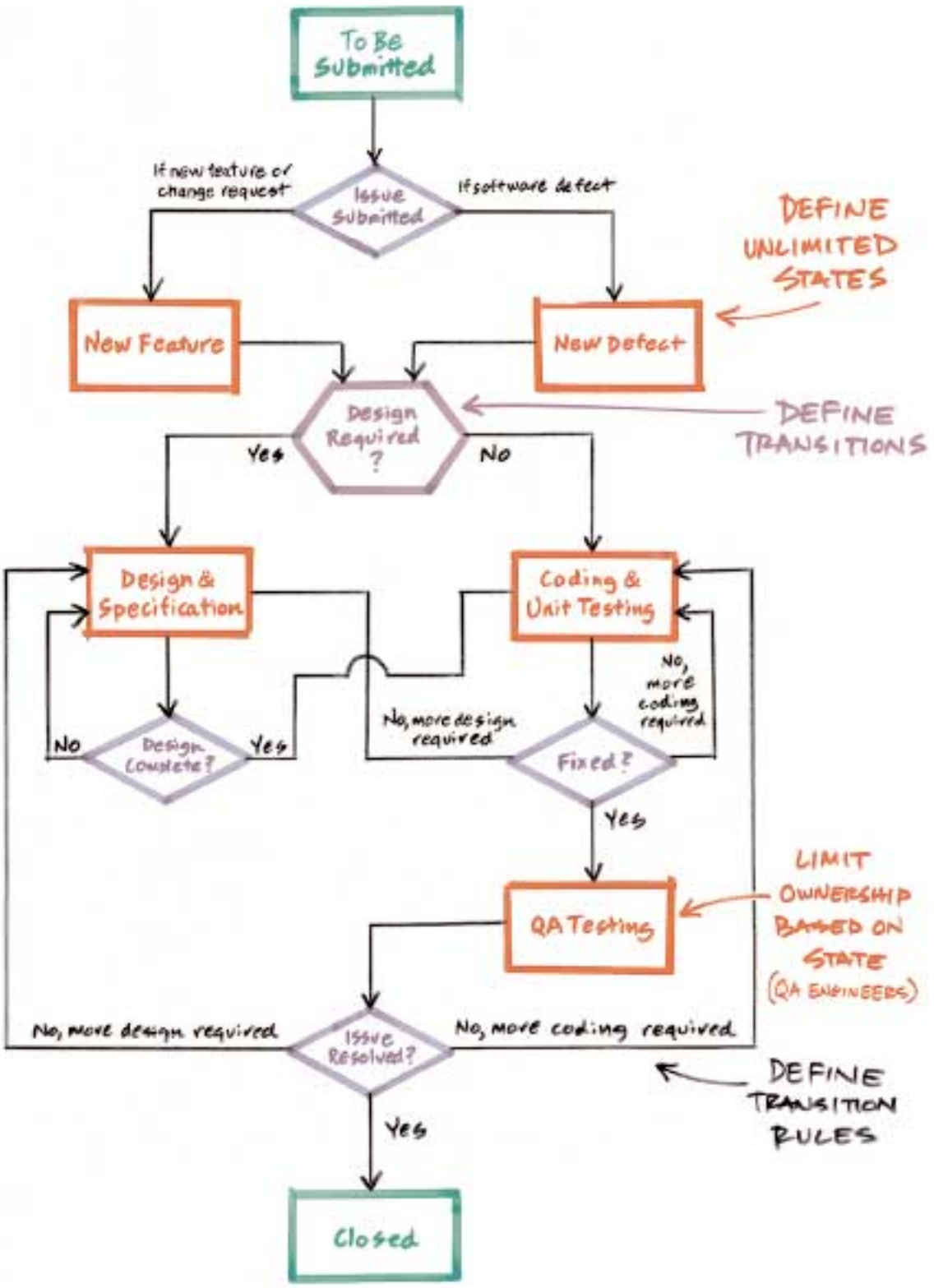

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